ROLE OF BULLOCK CARTS AND TRUCKS IN RURAL TRANSPORT —CASE STUDIES

Undertaken at the instance of Committee on Transport Policy and Coordination

PROGRAMME EVALUATION ORGANISATION
PLANNING COMMISSION
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CONTENTS

PREFACE

At the request of the Committee on Transport Policy and Coordination, the Programme Evaluation Organisation undertook an investigation to assess the role of the bullock cart in rural transport, and changes therein over the last decade or so. Since this study had to go, for considerable stretches, over an untrodden path (both kutcha and pucca), it was decided to take it up in five selected mandis and their hinterland and conduct it as an intensive case study. The nature and extent of use of bullock carts, the ground lost by them to mechanised transport and the underlying economic factors have been enquired into in each of these market areas. The main points emerging from the case studies in these five areas have been summed up in the last chapter. In spite of a number of limitations of the sutdy, it does provide some basis for understanding the likely course of development of transport in rural areas in the near future.

NEW DELHI,
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PART I

CHAPTER 1

Background and Methodology

1.1. *Background*

At the instance, and on behalf of the Committee on Transport policy and Coordination, appointed by the Planning Commission, the Programme Evaluation Organisation undertook to study the role played by bullock carts and other traditional modes of transport in rural areas. This happens to be one of the fields in which very few studies have so far been conducted, and on which the available information is sadly inadequate. In fact, there is practically nothing that will throw light on the changes, if any, that have taken place in the role of these traditional means of rural transport. Under these circumstances, it was decided to make this study more or less of an exploratory nature, conducted with the help of the case method. An estimational survey was accordingly ruled out.

1.2. *Objective and Approach*

The broad objective of the study was to understand and analyse the role of the traditional modes of transport, such as bullock carts, hackney carts and thelas, in the traffic in rural areas and to assess the changes that have taken place in their relative importance as a result of introduction of mechanised road transport. With the resources available to the PEO for the purpose of this study, it was felt that its scope had to be narrowed down and linked to the most important type and pattern of trade in the rural areas, namely, marketing of agricultural commodities by villagers and their purchase of commodities produced outside. Rural traffic in goods has been assumed to be determined and conditioned by the nature, volume and direction of such trade. This assumption served to give the necessary focus to the study, as it implied that the share and role of different carriers in this traffic could be observed and analysed with the help of the 'trade-centre' approach. It was accordingly decided to base the study on field data for a few selected markets, the term 'market' being used here in the sense of 'market area' comprising the trading centre or mandi and the hinterland of villages.

1.3. *Markets studied*

Five markets were selected in five regions of India, for a case study. In order that there should be sufficient scope for observation of the roles of both traditional and mechanised modes of transport, it was decided that the selected markets should be intermediate in size as well as functional role. Markets of this type were assumed to be suitable for obtaining a fairly complete picture of the trade and traffic from and to villages and a general idea of its extension in space beyond the market. The following is the list of selected markets :

State	District	Market
1. Madras	South Arcot	Tindivanam
2. Maharashtra	Nasik	Lasalgaon
3. Punjab	Patiala	Sirhind
4. U.P.	Gorakhpur	Gorakhpur
5. West Bengal	Birbhum	Sainthia

Data have been gathered both in the selected mandis (Market centres) and in a selected number of villages constituting their hinterland.

1.4. *Period of study*

The field work for the study was carried out during the busy season of kharif arrivals in the selected markets. It was initiated in U.P., Bombay and Punjab in the first fortnight of December, 1960, in Madras towards the end of December, 1960 and in West Bengal in the second fortnight of January, 1961. The collection of field data took about two months.

1.5. *Reference Period*

The reference period is 1959-60 except in Sainthia where it is 1960. An attempt was also made to collect data for 1949-50 or the year nearest to it for which figures were available for some items so as to obtain some idea of the change over time.

1.6. *Method of collection of data*

(a) *Mandi-level*—The following schedules were devised for collecting data in the mandi :

(i) Mandi Schedule;

(ii) Interview of Selected Hauliers;

(iii) Traffic Survey Schedule.

(i) *Mandi Schedule.*—Apart from the background information for the mandi, the mandi schedule is intended to provide information on the nature and volume of business *e.g.* arrivals and despatches, seasonal fluctuations, directions of trade, transport facilities and their characteristics, transport requirements, proportion and kinds of trade handled, etc.

The following sources were tapped for collecting the above data: (i) records kept by market committees, commercial organisations, chambers of commerce, octroi departments and other bodies, (ii) interview with traders, commission agents and other knowledgeable persons, (iii) discussion with government officials, such as marketing officers and inspectors and the records kept in their offices.

(ii) *Interview of Selected Hauliers.*—Hauliers were defined as persons who ply traditional modes of transport, *e.g.*, bullock carts, hackney carts, thelas on hire or are engaged in operating mechanised means of transport, such as trucks, as a business.

The sample of hauliers was selected at random according to the following design :

No. of hauliers in the mandi	No. selected
Upto 100	.. 60 per cent with a minimum of 25
100 and above	.. 50 per cent with a minimum of 60.

A list of hauliers of each of the above categories residing within two miles of the mandi was prepared. Thereafter, the number to be selected was determined on the basis of the above proportion and a selection made with the help of random number sheets.

Information was gathered among others, on items such as particulars of the types of vehicles, costs of operation, relative economics of different modes of transport, their profitability.

(iii) *Traffic Survey.*—A survey of the traffic coming to the mandi on carts and trucks was also conducted. The most important pucca roads along which trade flows to the market were selected for this purpose. Firstly, a count was made of all the carts and trucks passing along that road with commodities for sale in the mandi. Counting was done either at the toll bar or octroi nearest to the mandi or at some convenient place near the mandi if there was no toll bar. Counting began early in the morning as carts began to arrive and continued till the major part of the traffic was over. Information was gathered on a brief schedule in respect of a selected number of carts and trucks from amongst those counted. A sample of 10 per cent or 5 whichever was higher was taken in each category.

(b) *Village level*

(i) *Selection of sample.*—Six villages were selected from the hinterland of the selected mandi. The selection was made on the basis of multi-stage stratified random sampling. The villages constituting the hinterland were first classified into two groups :

(a) those which are congenial to truck transport and suitable for bringing out a comparative picture of trucks and carts; and

(b) those in which truck transport is at a discount and which are specially suited for cart transport. For (a), a list of villages lying on the pucca road or within two miles of it was first drawn up. At the second stage, from amongst them those which were sufficiently distant from the mandi to be worthwhile for trucks to operate, were included in the sampling frame. For this purpose, the minimum distance considered truckable was ascertained from knowledgeable persons in each area and villages situated at distances less than this were excluded. Two villages were selected at random from the remainder. Similarly, the villages away from a pucca road (b) were divided into four equal distance groups and one village selected at random from each group.

In each sample village, 30 per cent of households possessing carts and using them for transporting their own produce or that of others were interviewed.

(ii) *Schedules.*—Two types of schedules were drawn up, one for the village as a whole, and the other for the households. In the village schedule, information was gathered from knowledgeable persons, *e.g.*, Sarpanch of the cooperative society, VLW in charge of the village, any professional carrier, the leading village merchant. The main items relate to the nature and volume of incoming and outgoing trade in agricultural produce, markets where goods are sent and from where goods are brought, particulars of carts and other traditional modes of transport.

Information was gathered from selected households on particulars of carts and other traditional transport, markets of sale, costs, earnings, preferences, role of trucks etc.

(iii) *No. of respondents.*—The number of respondents of different types canvassed in different mandis is given in Table 1.1 below :

TABLE 1·1

No. of respondents canvassed and number in the sample frame

Type of schedule	Number of respondents canvassed						Number in the sample frame					
	Total	Tindivanam	Lasalgaon	Sirhind	Gorakhpur	Sainthia	Total	Tindivanam	Lasalgaon	Sirhind	Gorakhpur	Sainthia
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
1. *Hauliers*												
(*a*) trucks	72	25	14	Nil	28	5	111	45	14	Nil	47	5
(*b*) carts & other traditional means of transport ..	191*	68	25	20*	51	27	319	145	30	20	79	45
2. *Traffic survey*												
(*a*) trucks ..	20	Nil	12	3	2	3	20	Nil	12	3	2	3
(*b*) carts ..	151	30	21	18	30	52	1,237	286	205	146	101	499
3. *Village* cartmen ..	320	41	106	67	39	67	1,055	135	354	219	124	223

* 2 could not be interviewed.

Thus about 750 owners and operators of transport were interviewed.

1.7. Qualitative notes

Two qualitative notes, one based on conditions in the mandi and the other on those in villages, bringing out the role of carts and trucks for different types of traffic and their future prospects were also prepared for each of the selected markets. These were also made use of at the time of preparing the final report.

1.8. Lay-out of the report

The report is divided into three parts; the introductory, the case studies and the concluding observations. The introductory part, consisting of chapters 1 and 2 contains a description of the methodology and scope of the study and the broad features of the selected markets or mandi areas.

Chapters 3 to 7 present the case studies of the five selected market areas, one chapter being devoted to one market area. Each case study is divided into two sections. The first section relates to traffic and transport in the mandi and the second to traffic and transport in the villages. The main topics in the mandi section are volume and composition of inward and outward traffic, its seasonal fluctuations, origin and destination, types of roads, modes of transport at different stages of the marketing process and for different purposes. The second section gives the analysis of data collected at the village and household level. The broad aspects dealt with here are volume and composition of incoming and outward traffic, types of transport, seasonal fluctuations, origin and destination, types of roads, modes of transport at different stages of the marketing process and for different purposes. The second section gives the analysis of data collected at the village and household level. The broad aspects dealt with here are volume and composition of incoming and outward traffic, types of transport, seasonal fluctuations, methods of marketing, characteristics of households possessing cart particulars of carts and kinds of use.

The last chapter which forms the third part, puts together the data on important aspects of the traffic and transport situation in the five mandi areas. Instead of trying to summarise the findings of each of the earlier chapters, an attempt has been made to sum up the main findings and project them into the future.

CHAPTER 2

Introduction to the selected markets

The volume, direction and other aspects of traffic and transport in a market area depend on the nature, area, functional organisation and other characteristics of the market. An understanding of the findings of this study will therefore, be helped if some information about the nature and background of the cross-section of markets selected for study is presented here before we go into the traffic and transport conditions in each of these areas.

2.1. Functional role

As has been stated in the previous chapter, all the five mandis,—Tindivanam (Madras), Lasalgaon (Maharashtra), Sirhind (Punjab), Gorakhpur (U.P.) and Sainthia (West Bengal) are of an intermediate character in respect of functional role and size. They handle agricultural produce, not at the initial or the ultimate stage of their marketing journey, but during the intermediate stage of the marketing process. In all the selected markets, a good proportion of arrivals comes from other primary assembling markets such as hats and periodical markets in the rural areas. Similarly, a major portion of the quantities despatched from these markets is sent to consumer markets where they are distributed to retailers and consuming centres, except in Gorakhpur where about 60 per cent is redistributed for use in the surrounding areas.

2.2. Size and importance

The area of the hinterland of the mandis *i.e.*, the area which feeds the market ranges from 71 square miles to about 1,100 sqaure miles. In spite of this large range in area, the number of villages from which the markets get their business is comparable being generally between 250 and 300. As regards the population of the hinterland, three mandis *viz.*, Sirhind, Gorakhpur and Sainthia have a population of about 1 lakh each while in the remaining two, Lasalgaon and Tindivanam, the population is about 2.7 lakhs and 3.2 lakhs respectively.

2.3. Principal features of the selected mandis

Rough sketches of maps of the selected market areas showing important roads and selected villages are given in the appendix. Brief observations on their principal features are given mandi-wise below.

2.3.1. Tindivanam Mandi—Madras State

Tindivanam, one of the taluk headquarters in the South Arcot District, is situated 75 miles south of Madras on Madras—Tiruchirapalli Trunk Road. It is centrally located and is connected with some of the important commercial centres in the Madras State by six important roads—one leading to Gingee and Tindivanam on the West, another leading to Wandiwash. Arniand Vellore on the North-West; two roads leading to Pondicherry and one leading to Marakhanam on the East and one leading to Villupuram and Tiruchirapalli on the south besides the Madras road on North. It is served by a hinterland covering about 300 villages and is an important centre for the marketing of paddy and groundnut.

The Tindivanam market was regulated in 1939. Accordingly, it has an elected non-official chairman and a paid secretary. The secretary is the Administrative Officer of the market and is controlled by the State Marketing Officer. The staff consists of a Superintendent, a Supervisor, 3 Clerks and 2 Yard Mistries. During the busy season, additional clerks and mistries are employed according to requirement. Two closed biddings take place daily, one at 10-30 a.m. and the other at 3.30 p.m. when the superintendent declares the highest bid for each lot in the presence of traders and ryots.

2.3.2. Lasalgaon Mandi—Maharashtra State

Lasalgaon mandi is situated in the Niphad taluka of the Nasik district on the main broad-gauge line of the Central Railway. Located between the Nasik Road Railway Station on the west and Manmad in the east, it is connected to the Bombay City on the western side, Nagpur and Calcutta on the eastern, and Indore and Delhi on the northern side by railway. There is a goods yard at the Lasalgaon railway station with facilities for loading and unloading. This mandi is also well connected by four pucca roads (Malegaon-Chandwas-Lasalgaon Road, Sinner-Lasalgaon Road, Yeola-Lasalgaon Road and Kopergaon-Lasalgaon Road) and one katchha road (Kotamgaon-Lasalgaon Road) with several big marketing centres.

The Lasalgaon market is regulated under the Agricultural Produce Act of Bombay and functions under the control of 'The Agricultural Produce Market Committee, Lasalgaon'. This Committee, set up in 1947 through a Notification by the erstwhile Government of Bombay, consists of 15 members, including representatives of agriculturists and traders. Prior to regulation, marketing was done by the itinerant traders who used to buy commodities from the cutlivators in their villages. The result of the market regulation has been that the cultivators bring their produce themselves to the market. Lasalgaon does not have any feeder markets, but is served by six sub-market yards—one each at Chandwad, Niphad, Saikeda, Ozar Palkhad and Pumpalgaon Basant. The major portion of the agricultural produce marketed from the neighbouring villages is brought to these sub-yards for sale, not to Lasalgaon which is farther away. Thus, these sub-market yards perform the function of primary assembling of agricultural produce. The main market committee at Lasalgaon exercises control and supervision over these yards in administrative and accounts matters.

With a jurisdiction extending to two taluks, Niphad and Chandwad of the Nasik district, the Lasalgaon mandi, serves as an assembling market for onions, groundnut, jaggery and cereals like wheat, jowar and bajra. The hinterland of the market encompasses an area of 1098.3 sq. miles with 278 villages and a population of 2,69,513 (1951 census). In addition to the villages of Niphad and Chandwad taluks, surrounding villages from the taluks of Malegaon, Sinner, Yeola, Kalwan in Nasik district and Kopergaon and Sangamnner in Ahmednagar district form part of the hinterland. There has been no change in the area and the number of villages during the last ten years.

2.3.3. Sirhind Mandi—Punjab State

Sirhind is a semi-urban place. It is located on the Sirhind-Morinda Pucca road and at a distance of about 1½ miles from its junctions with the Grand Trunk Road between Rajpura and Khanna markets. These are the only pucca roads. Besides, there are two katcha roads, one linking it to

Patiala and the other to Chandigarh *via* a village known as Chunni Machhli. The first road joins the G.T. road at village Madhopur at a distance of about 3 miles from the junction of the G.T. Road and the Morinda-Sirhind road towards Ambala. The second road links it to a point known as Jyoti Sarup on the Sirhind-Morinda road (about 3 miles from Sirhind mandi) and village Ladrain on Kharar-Ambala Road. These are not in a good condition particularly during the rainy season. The construction work to convert them into pucca roads has already started.

Sirhind is surrounded by a number of regulated markets both large and small, *viz.*, Bassi, Govindgarh and Amlok. All these markets were regulated in 1948. It is the only important market for cotton and paddy in a large area. There are three nearby smaller markets, *viz.*, Bassi, Govindgarh and Amlok. Paddy, cotton and chillies arriving in these markets are generally brought to the Sirhind mandi for resale. In respect of these commodities, therefore, these markets perform the function of primary assembling of produce from the commercial hinterland. A portion of the total arrivals of chillies from the Rajpura mandi is also brought to this market for resale after drying it.

In a few villages of the hinterland, large quantities of onion are produced. The beoparies of the mandi usually handle this commodity but it is not brought to this market. The produce is purchased in the villages from where it is directly despatched to the vegetable markets at Ludhiana, Jullundur, Amritsar and Delhi.

2.3.4. *Gorakhpur Mandi—U.P.*

Gorakhpur town is a district headquarter in the Eastern U.P. and is connected by pucca roads upto Nichlaul and Nautanwa in the north on the Nepal border and in the south upto Barhalganj and Gola. A pucca road also runs to Basti and beyond in the west and another pucca road in the east goes to Deoria and Kasia. Gorakhpur is also the headquarters of the North-Eastern Railway and is an important railway junction. It is an important commercial centre handling a large volume of trade by road as well as by rail from distant places in U.P., Punjab, Rajasthan, Bihar, West Bengal and Assam. This mandi is popularly known as Chauria Sahebganj Mandi. It performs the primary assembling functions of commodities brought direct for sale by producers from villages situated within an average distance of 20 miles. Since the hinterland of this market specialises in commercial crops like sugarcane and oil-seeds and is not self-sufficient in foodgrains, the function of sending out the former from, and bringing in the latter to the market assumes great importance. Large quantities of commodities received direct from the producers are sent out to other assembling and distributing markets from this mandi.

Till about 1920, there were only two or three 'Goledars' and 'Arhatyas' dealing mainly in oil-seeds on a large scale. Business in oil-seeds improved after 1920 when more buyers came from outside and started purchase of oil-seeds for export. The chief among them were the Ralli Brothers. This firm diverted its attention towards foodgrains in the off-seasons, when there were no arrivals of oil-seeds. When business in foodgrains started, their arrivals increased and, consequently, more 'Goledars' and 'Arhatyas' came into existence. Foodgrains started coming on a considerable scale; and the mandi gradually assumed the present important position.

2.3.5. *Sainthia Mandi—West Bengal*

Sainthia is Thana headquarters at a distance of 12 miles from Suri, the headquarters of the Birbhum district. It is a station on the Sahebganj loop line of the Eastern Railway connecting North Bengal, Assam and a portion of Bihar on the one side, and Calcutta on the other. It is also a railway junction with the branch line running through Suri to Ondal on the main line of the Eastern Railway and connecting the coal-fields of Raniganj and the industrial area of Durgapur.

There is no market regulation act in West Bengal. Trade and marketing are carried on by market functionaries at different stages. Market function include trade, transportation, processing and storage. No octori is levied on trade coming to the market.

Sainthia is the most important trading centre in the district, particularly in respect of the marketing of paddy, and to a smaller extent, of potato, gur and other commodities, both agricultural and non-agricultural. It serves its hinterland as well as the nearby important markets. Sanithia has got some natural facilities due to which it has grown up steadily into a big market. The district of Birbhum is surplus in the production of paddy and the Sainthia market is situated in the heart of this paddy area with a large marketed surplus. It is also well connected, by a chain of *katcha* and *pucca* roads, with its hinterland.

The hinterland of the market encompasses an area of 300 sq. miles with 283 villages, and comprises the major portions of Sainthia, Mohammad Bazar and Mayourshwar police stations and some portion of Suri police station in the district of Birbhum, as well as parts of the Kandi sub-division of the neighbouring Murshidabad district. The area has come down from 350 sq. miles during the last ten years and the number of villages has also decreased from 325 to 283.

Communication between the market and the villages in the hinterland takes place over katcha roads running about 200 miles and pucca roads about 60 miles on all sides of the market constructed during the last ten years.

2.4. Volume of traffic handled

The following table gives data about the nature and volume of traffic handled by the five selected mandis in 1959-60.

Sainthia and Lasalgaon are the largest among the selected mandis. These handle about 22—25 lakh maunds whereas Sirhind, at the other extreme, handles only about 8 lakh mds. Gorakhpur and Tindivanam, where the total trade in 1959-60 was of the order of 12-13 lakh maunds, come in-between. Of the total trade handled, arrivals account for a larger proportion in all cases, the difference being very marked in Gorkhpur and Lasalgaon.

Nearly 60 per cent of the arrivals in Gorkhpur mandi are locally consumed. The local consumption varies from 15 per cent to 34 per cent of the arrivals in other mandis.

In Lasalgaon and Tindivanam mandis, there are no arrivals of non-food crops. In the case of other three mandis also, the arrivals of food crops are several times the arrivals of non-food crops.

TABLE 2·1

Nature and volume of traffic handled during 1959-60

(Quantity in maunds)

Mandis	Inward Crops			Outward Crops			Total trade (Total of cols. 4 & 7)
	Food	Non-food	Total	Food	Non-food	Total	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1. Tindivanam	7,02,888	Nil	7,02,888	5,99,178	Nil	5,99,178	13,02,066
2. Lasalgaon	13,27,533	Nil	13,37,533	8,84,584	Nil	8,84,584	22,22,117
3. Sirhind	2,86,969	1,80,816	4,67,785	2,79,000	88,000	3,67,000	8,34,785
4. Gorakhpur	6,93,000	1,74,000	8,67,000	2,01,000	1,35,000	3,36,000	12,03,000
5. Sainthia	11,89,963	1,64,043	13,54,006	9,67,261	1,64,043	11,31,304	24,85,310

2.5. Functionaries

The position of different mandis in regard to the number of traders and other market functionaries is shown in the following table :

TABLE 2.2

Number and types of functionaries

Type of functionary	Tindivanam	Lasalgaon	Sirhind	Gorakhpur	Sainthia
(1)	(2)	(3)	(4)	(5)	(6)
1. Wholesale traders	20	37	19	40	9
2. Commission agents	20	17	31	15	6
3. Brokers	Nil	Nil	7	8	13

It is significant that the number of traders and other functionaries is not related to the volume of trade. For example, Sirhind, the smallest from the latter point of view, has twice as many wholesale traders as Sainthia, the largest.

2.6. Reliability of data

As stated in the introduction, data have been collected from the following sources :

1. Records of octori posts or of market committees.
2. Discussions with traders and other knowledgeable persons in the markets and villages.
3. Interviews of selected transport workers in the mandis.
4. Interviews of selected owners of bullock carts in the villages.

Records were generally available for trade, *i.e.*, those relating to quantities of arrivals and despatches in the markets. These are fairly reliable specially in the regulated markets. But no such records for trade movements are available in respect of villages. These, as also the data relating to the relative shares handled by carts and trucks, given at various places, are based on estimates arrived at by discussion with knowledgeable persons. They naturally vary greatly in respect of their reliability, more so in regard to figures for earlier periods.

PART II—REPORTS OF CASE STUDIES

CHAPTER 3

CASE STUDY OF TINDIVANAM MANDI

I. Traffic and Transport in the Mandi

3.1. Incoming traffic

3.1.1. *Volume and composition*

There are practically no arrivals by rail. Figures of incoming road-borne traffic of principal commodities during 1950-51 and 1959-60 are given in the following table :

Table 3.1

Incoming traffic in principal commodities

Commodity	1950-51		1959-60		% change during the period
	Qty. (mds.)	% to total	Qty. (mds.)	% to total	
(1)	(2)	(3)	(4)	(5)	(6)
1. Groudnut	1,77,436	N.A.	2,02,888	28·8	14·3
2. Paddy	N.A.	N.A.	5,00,000	71·2	N.A.
Total ..	N.A.	100·0	7,02,888	100·0	N.A.

There are two important commodities, groundnut and paddy, which arrive in the mandi. During 1950-51, paddy being a controlled commodity, data regarding the quantity received are not available. Groundnut has registered an increase of about 14 per cent over a period of 9 years. In 1959-60, groundnut formed about 29 per cent of total arrivals.

3.1.2. *Seasonal variations*

The following table gives the distribution of incoming cart* traffic into four calendar quarters :

Table 3.2

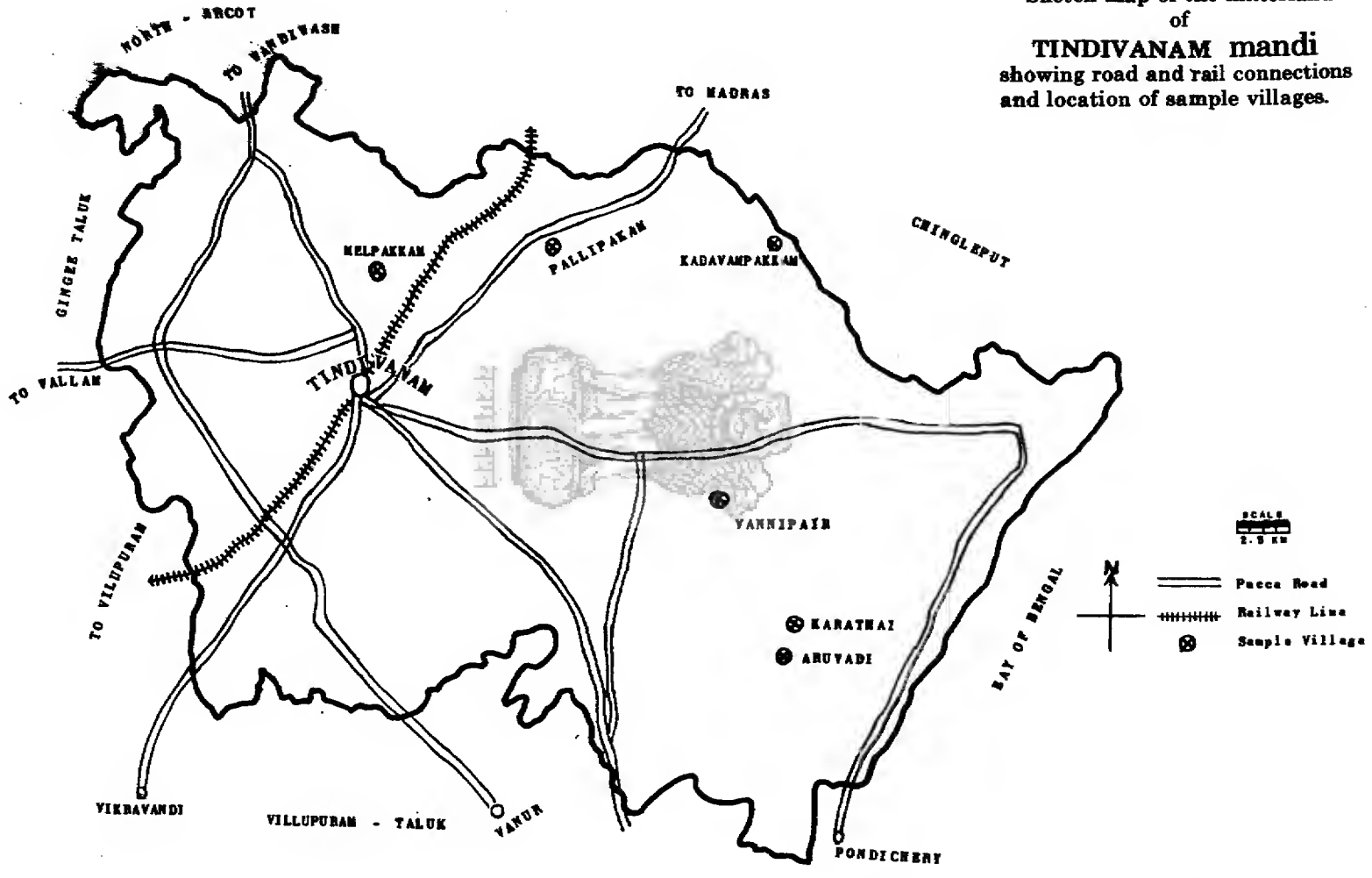
Seasonal distribution incoming traffic (by carts) during 1959-60

Quarters	Quantity (mds.)	% to total arrivals
1. Jan. to March	3,06,235	45·4
2. April to June	1,47,264	21·8
3. July to September	46,745	6·9
4. October to December	1,74,528	25·9
Total	6,74,772	100·0

First and last quarters account for nearly 71 per cent of the total incoming traffic. The trade is thus brisk continuously for six months from October to March. Thereafter the tempo begins to decline and business is at its lowest ebb during the monsoons.

*Information for traffic by other modes is not available.

Sketch map of the hinterland
of
TINDIVANAM mandi
showing road and rail connections
and location of sample villages.



In the case of groundnut carried by carts, (as figures for total quantity are not available), there is a marked concentration of arrivals in the first and fourth quarters during 1959-60. This is due to the fact that October to March is the peak season for the marketing of groundnuts. Nine years ago, it were the first and second quarters which accounted for the greater proportion of arrivals. As the total arrivals by seasons are not available, it is not possible to comment upon the percentage carried by carts during the busy and the slack seasons. Figures of arrivals of paddy for 1950-51 are not available. During 1959-60, first quarter accounts for 50 per cent of arrival and the remaining is equally distributed between second and fourth quarters. In the third quarter, there are no arrivals.

Some light on the variations in the flow of traffic during the course of the year is also thrown by data collected at the time of the traffic survey on the number of visits made by selected carters during the busy and slack seasons. The busy season, as reported by respondents, extends over four months and in a few cases even longer, but four months *i.e.*, December and January, July, and August have been reported by the majority of the respondents. The slack season also varies from respondent to respondent but the months of April and May, September and October constitute the slack season generally.

The following table shows the number of visits made by the 30 sample carters during the busy and the slack seasons :

TABLE 3.3

Distribution of carters by frequency of visits per month

Category of carters	No.	No. of carters in different Trip frequency groups Busy season			Slack season		
		1 & less than 1	2—5	5 & above	Nil	1 & less than 1	5 and above
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1. Private	29	19	9	1	13	15	1
2. Public	1	1	—	—	1	—	—
TOTAL ..	30	20	9	1	14	15	1

The table reveals that 50 to 67 per cent of the carters generally come to the mandi once. There is a marked difference in frequency between busy and slack seasons. Whereas 10 out of 30 made more than 2 visits to the mandi during the busy months, only 1 did so in the slack season.

3.1.3. *Frequency of monthly trips and distance groups*

The following table shows the number of visits to the mandi during the busy and the slack seasons according to distance grounp :

TABLE 3.4

Distributions of carters by frequency of trips per month in different trip groups by distances

Distance range	No. relevant	Busy season			Slack season		
		1 & less than 1	2—5	5 & above	Nil	1 & less than 1	5 and above
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1. 2—5 miles	2	1	1	—	1	1	—
2. 5—10 miles	10	8	2	—	7	3	—
3. 10—20 miles ..	15	10	4	1	6	8	1
4. 20 & above	3	1	2	—	—	3	—
TOTAL ..	30	20	9	1	14	15	1

15 or 50 per cent of the carters came from a distance range of 10—20 miles. The next important range is 5—10 miles from which 10 or 33 per cent of the carters visited the mandi. Judging from the number of visits, the former is more active. 5 out of 15 or 33 per cent made more than 2 visits during the busy and 8 or more than half made nearly *one* visit during the slack season, as against only 20 per cent and 30 per cent of carters from the 5—10 mile group.

3.1.4. *Types of roads*

The entire produce is brought to the mandi on pucca roads now and so was the case 9 years back.

3.2. Outgoing traffic

3.2.1. *Volume and composition*

The following table shows the nature and composition of the outgoing traffic of this mandi :

TABLE 3.5

Volume and composition of the principal outgoing traffic in 1959-60

Commodity	Quantity (in mds.)	% to total out.going traffic	% to arrivals
(1)	(2)	(3)	(4)
1. Groundnut	1,49,663	24·9	73·8
2. Paddy	4,49,515	75·1	89·9
TOTAL	5,99,178	100·0	85·2

The total outgoing traffic comes to about 6 lakh maunds, paddy constituting about 75 per cent and groundnut about 25 per cent. Data for the earlier period being not available for paddy as records are not maintained in the proper form, it is not possible to comment on the change in pattern, if any, that has taken place. The outgoing traffic constitutes about 85 per cent of the arrivals, varying from 74 per cent to 90 per cent for groundnut and paddy respectively.

3.2.2. *Seasonal variations* :

About 62 per cent of the outgoing traffic of groundnut by road takes place during the first (January to March) and fourth (October to December) quarters of the year. The order of importance of different quarters is first, fourth, third and second. Nine years back the order was fourth, first, second and third—fourth and first together accounting for 74 per cent of total outgoing traffic. As far as paddy is concerned, the first quarter accounts for 50 per cent of the outgoing traffic and the second and the fourth for 25 per cent each.

3.3. Transport organisations

In Tindivanam Mandi only one lorry booking office is functioning. There are no transport associations. The main objective of this office is to help the traders in transporting their goods. Since this office has no transport vehicles of its own, it charges commission from traders for the

booking of goods by lorries. It was organised 5 years back and has 6 members on its rolls.

3.4. Modes of transport

3.4.1. *Intra-mandi movements*

For intra-mandi transport only bullock-carts and thelas are used. Of these the latter are by far more important, accounting for about 75 per cent.

3.4.2. *Incoming traffic*

(a) Role of carts.

The following table shows the relative importance of carts and trucks in the movment of traffic to this mandi commodity-wise in 1959-60 :

TABLE 3.6

Incoming road traffic (by commodities) handled by carts

Commodity	Qunatity (mds.)	Percentage
1. Groundnut	1,94,772	96·0
2. Paddy	4,80,000	96·0
TOTAL	6,74,772	96·00

Though figures for 1950-51 are not available for paddy, the entire paddy and groundnut was transported to the mandi in carts and now the percentage has declined slightly to 96.

(b) Distance groups.

The data for this item both in respect of paddy and groundnut are not available. It may, however, be said that the bulk of the incoming traffic which is reported to be by bullock carts, is from a maximum distance of about 30 miles from the mandi. According to the traffic survey 11 or 37 per cent of the 30 carts came from a distance of 10—15 miles and 10 or 33 per cent from that of 5—10 miles. Thus these are the two important groups accounting for 70 per cent of the inward traffic.

3.4.3. *Outgoing traffic*

(a) Relative importance of road.

The following table shows the quantities of different commodities in the outgoing traffic handled by road :

TABLE 3.7

Percentage of outgoing traffic handled by road

Commodity	1959-60	
	Road	
	Quantity (mds.)	% to total
(1)	(2)	(3)
1. Groundnut	1,47,902	98·8
2. Paddy	3,90,000	86·8
TOTAL	5,37,902	89·78

Of the total outgoing traffic about 10 per cent is sent by rail and 90 per cent by road. Groundnuts are sent practically wholly by road, while 13 per cent of the total despatches of paddy are carried by rail. Thus the railways are not largely utilised in the transportation of paddy and groundnut. This may be attributed to the shortage of wagons on the one hand and cheaper and quicker transportation by trucks which are available in large number, on the other. Figures for 1950-51 are not available, so it cannot be said as to what extent a change has taken place between the proportion handled by railways and road.

(b) Carts Vs. Trucks.

The entire outgoing road-borne traffic is by trucks only.

3.5. Economic characteristics of transport workers

3.5.1. *Number and type*

Carters and truckers have been classified into 3 types—Type A—those who are private carriers carrying only their own produce. Type B—public carriers carrying others' produce only and Type C—those who carry their own as well as others' produce.

Out of 190 hauliers in the mandi 93 were selected, 61 being bullock carters, 7 hand carters and 25 truckers. The number of hauliers—10 years back—is not available, hence no comments can be made about the changes in their number. Their classification into different types was not available in the municipal records.

Counting of traffic to the mandi was done on four different days allotting two days each for the regulated market (groundnut) and the paddy mandi. The total number of carts which arrived on these days came to 120 in the regulated market and 166 in the other market. A sample of 30 in all was selected, of which 29 were of A type and one was of B type. No truck arrived in the mandi on these days.

3.5.2. *Occupational distribution*

Of the 61 sample bullock carters in the mandi, 54 (88.51 per cent) have hauling as principal occupation and 7 (11.51 per cent) follow it as a subsidiary occupation. All the 7 hand carters are principal hauliers. Of the 25 truckers 18 and 7 (72 per cent and 28 per cent) are principal and subsidiary hauliers.

20 of the 30 carters coming to the mandi had no subsidiary occupation to follow while all had cultivation as their principal occupation. 7 of the remaining had agricultural labour, 2 had petty business and one had carting as a second string to their bow.

3.4.3. *Occupational standing*

The table below gives the distribution of principal hauliers in the mandi by the length of the period for which they have been in the occupations :

TABLE 3.8

Classification of principal hauliers by the length of service

Type of operators	Period since engaged (Years)				
	Less than 2	2—5	5—10	Above 10	Total
(1)	(2)	(3)	(4)	(5)	(6)
1. Bullock carters ..	—	—	9	45	54
2. Hand carters ..	—	—	1	6	7
3. Truckers	1	—	7	10	18

9 (16.6 per cent) of the principal bullock carters have been in this profession for 5—10 years and the rest 45 (83.4 per cent) for more than 10 years. Of the 7 hand carters 1 (14.3 per cent) has been working as such for 5—10 years. One principal trucker has served for less than 2 years, whereas 56 per cent for 10 years and more. Thus all the principal hauliers have been fairly long in this profession.

Of the 7 subsidiary truckers 3 or about 43 per cent have served for over 10 years. Among the 7 subsidiary bullock carters 6 (85.7 per cent) have served for 5—10 years. It is only among this class of hauliers that we find some new comers.

3.5.4. *Types of vehicles used*

(a) *Ownership.*—All the 54 principal bullock carters own their carts as also 4 out of the 7 principal hand carters. Similarly, all the 18 principal truckers own their vehicles. Among the subsidiary hauliers 5 bullock carters own their carts and 2 hire them. Among the 7 subsidiary truckers two own two vehicles each while the rest 5 own one vehicle each making in all 9 vehicles. Thus the majority of hauliers own their vehicles. All the carts bringing goods from outside were owned except that one of a public carter which was a hired one.

(b) *Make.*—All the bullock carts and hand carts in the mandi as also those which brought goods from outside are of the old type.

(c) *Period of running.*—The principal bullock carters have been owning their carts for at least one year, 35 (64.8 per cent) of them owning for 1—5 years and the rest 19 (35.2 per cent) for 5—10 years. The hand carters falling in these groups are 2 (50 per cent) and 2 (50 per cent) respectively. Among the principal truckers, one (5.6 per cent) has purchased his vehicle newly, 8 (44.4 per cent) have been in use for 1 to 3 years, 7 (38.9 per cent) for 3—5 years and 2 (11.1 per cent) for 5—10 years. Thus it is among the truckers only that we find some recent purchasers.

4 of the bullock carts of the subsidiary bullock carters were purchased 1—5 years back and the remaining 1 was acquired 5 years back. The 9 vehicles among 7 subsidiary truckers have been purchased as follows: 7 (77.8 per cent) 1—3 years back 1 (11.1 per cent) 4 years back and 1 (11.1 per cent) 6 years back.

(d) *Capacity of vehicles.*—The following table shows the utilisation of the capacity of carts which were bringing goods to the mandi at the time of interview :

TABLE 3.9

Utilisation of capacity of carts by different categories of carters

Category of carters	No.	Less than 1/2		1/2 to 3/4th		3/4th to full		Above full	
		No.	%	No.	%	No.	%	No.	%
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1. Private	29	5	17·2	5	17·2	18	62·2	1	3·4
2. Public	1	—	—	—	—	1	100·0	—	—
TOTAL	30	5	16·7	5	16·7	19	63·3	1	3·3

The public cart was used much more fully than the private ones. It was carrying more than 3/4th of its capacity, while of the private carters, only 18 or 62 per cent fall in this category. Of the remaining 11, 5 carried even less than half of their capacity, while a similar number were carrying ½ to ¾th of their capacity, and the remaining one took more than its capacity. Taking both types, 63 per cent of the carts carried weight between ¾th to full capacity.

3.5.5. *Employment pattern*

(a) *Full-time workers.*—The hauliers in the sample have worked on a full-time or a part-time basis. The mandays of employment (*i.e.* equivalent of 8 hours of work in a day) are analysed in the table below :

TABLE 3.10

Mandays worked during last month

Principal occupation	Less than 20 days	20—25 days	25 days & above	Total	Average
(1)	(2)	(3)	(4)	(5)	(6)
1. Bullock carters	4	48	2	54	19·72
2. Hand carters	—	4	3	7	22·15
3. Truck operators	—	14	4	18	21·11
Subsidiary occupation					
1. Bullock carters	—	4	1	5	21·00
2. Truck operators	—	6	1	7	20·71

These figures show that a large majority of each type of haulier is employed for 20—25 days in a month, the overall averages for the 3 types of principal hauliers varying narrowly between about 20 and 22 days. The subsidiary hauliers are employed almost equally.

(b) *Part-time workers.*—No principal hauliers undertake part-time work, whereas 2 subsidiary bullock carters are employed on part-time work also. Their average employment in a month comes to 9.50.

II. VOLUME OF TRAFFIC AND MODES OF TRANSPORT IN THE VILLAGES

3.6. *Incoming traffic*

3.6.1. *Volume*

Data on volume of incoming traffic were collected both at the village and household levels. The following table shows the volume of principal incoming traffic in the six selected villages. Fertilisers, manures and oil cakes are the main constituents of the incoming traffic. Fertilizers alone formed about 42.4 per cent of them in 1959-60. Imports of fertilizers, manures and oil cakes rose by 114.3 per cent, and those of diesel oil by 130.7 per cent, during the last 10 years and by 37.5 per cent and 50.0 per cent respectively during the last 5 years.

TABLE 3.11

Volume of incoming traffic

Commodities	10 years back (Qty.)	5 years back (Qty.)	1959-60	Percentage change	
				Over 10 years	Over last 5 years
(1)	(2)	(3)	(4)	(5)	(6)
1. Fertilisers, manures and oil cakes (mds.)	1,540	2,400	3,300	114·3	37·5
2. Diesel oil. and crude oil (Barrels) ..	130	200	300	130·7	50·0

3.6.2. *Origin*

All the incoming traffic comes from the mandi *i.e.* Tindivanam. However, data based on household inquiry show that 56 per cent of imports covered distances over 10 miles (about half even covering over 15 miles), about 1/4th covered a distance of 5 to 10 miles, while only 19.4 per cent came from a distance of less than 5 miles.

3.7. Outgoing traffic

3.7.1. *Volume and composition*

The following table shows the nature and volume of outgoing traffic :

TABLE 3.12

Nature and volume of the outgoing traffic

(Quantity in mds.)

Commodity exported	10 years back (Qty.)	5 years back (Qty.)	1959-60 (Qty.)	%age change over 10 years	%age change over 5 years
(1)	(2)	(3)	(4)	(5)	(6)
1. Paddy	17,400	20,800	22,600	29·9	8·6
2. Groundnut ..	5,400	6,800	5,600	3·7	(—)17·7
3. Pulses	400	400	200	(—)50·0	(—)50·0
TOTAL ..	23,200	28,000	28,400	22·4	1·4

Paddy, groundnut and pulses are the principal commodities constituting outgoing traffic. Paddy alone accounts for 79.6 per cent. Paddy and groundnut account for about 99.3 per cent. There had been an increase of 22.4 per cent in the volume of outgoing traffic over the last 10 years but the increase during the last 5 years was only 1.4 per cent. The increase was most conspicuous in the case of paddy in which the rise in traffic was of the order of nearly 30 per cent in the last 10 years. The data further show that the outgoings of groundnut during the last year were lower by 17.7 per cent as compared to those 5 years ago. Groundnut being a rainfed crop, its production is greatly affected by the season. The year 1959-60 was a slump year and there had been a considerable fall in production during that year.

3.7.2. *Seasons*

There are two harvesting seasons *viz.*, winter and summer for both paddy and groundnut. The summer harvest for paddy takes place in April and

May, and the winter harvest in December and January. The summer harvest of groundnut takes place in June, July and August, while the winter in November to January. Paddy is exported mainly during the months of April and May, and again, from December to February and groundnut during June & July and November to January. Between the two seasons, the winter season is more important. About 2/3rd of the exports of paddy take place during the months of December to February and 2/3rd of groundnut during November to January. The remaining 1/3rd of paddy is sent to the market in April and May and of groundnut in June and July.

3.7.3. *Method of marketing*

A notable feature in this region is that the growers take their produce directly to the mandi *i.e.* Tindivanam. Further, the whole of the surplus is sent by carts. Thus, distance from the mandi or nearness to a pucca road seems to have little to do with the method of marketing and the mode of transport.

3.7.4. *Distances*

The whole of the marketable surplus is sent to the selected mandi *viz.*, Tindivanam. There are neither sub-mandis nor feeding markets in the hinterland. It is rather interesting to observe that in spite of long distance from some of the villages *i.e.* ranging from 12 to 16 miles, sub-mandis have not come up as has happened in Lasalgaon in Maharashtra. Cultivators probably prefer to bring the commodities to Tindivanam which happens to be a regulated market for groundnut and an important one for paddy and they expect reasonable returns.

3.8. Households possessing carts

3.8.1. *Total*

It was found that 11.4 per cent of the households, *i.e.*, 135, in the sample villages possessed carts. While, in two villages *viz.*, Aruvadi and Karathai, 25 per cent and 21.6 per cent of the households respectively possessed carts; in other villages the percentage of such households varied between 6.5 and 11.7. The percentage of households possessing carts was 11.7 and 8.8 in the two roadside villages respectively. The table given below shows the relationship between the number of carts and the volume of outgoing traffic :

TABLE 3.13

Number of carts and annual volume of outgoing traffic

Item	1949-50	1954-55	1959-60	% increase over 10 years	% increase over last 5 years
(1)	(2)	(3)	(4)	(5)	(6)
1. No. of carts ..	116	118	135	16·4	14·4
2. Total quantity of outgoing traffic from selected villages (mds.) ..	23,200	28,000	28,400	22·4	1·4
3. Volume of outgoing traffic per cart (mds.)	200	237·3	210·4	5·2	—(11·5)

A cart handles about 210 mds. of villages' outgoing traffic per year. During the five-year period, 1949-50 to 1954-55, the outgoing traffic rose from 23,200 mds. to 28,000 mds., *i.e.* by 19.6 per cent, but the number of carts hardly showed any increase with the result that the average of load per cart went up from 200 to 237 mds. But, in the next five years, when the outgoing traffic remained practically stationery, the number of carts rose by 14.4 per cent, and the average load per cart was again reduced. Thus, supply of carts is influenced little by the volume of outgoing traffic.

3.8.2. *Selected households*

(a) Occupational distribution.

30 per cent, *i.e.* 41 households, were selected on a random basis for an intensive enquiry relating to the types of carts possessed, the extent of and nature of their use for transport purposes and the economics of their operation. The following table shows the occupational distribution of the selected cart—possessing households.

TABLE 3.14

Distribution of selected households by subsidiary occupation

Principal occupation	No. of households	Distribution according to first subsidiary occupation				
		Cultivator	Transport	Agrl. labour	Trader	Nil
(1)	(2)	(3)	(4)	(5)	(6)	(7)
Cultivation	41	Nil	25	Nil	Nil	16

All the sample 'cart possessing households' belong to the cultivating class *i.e.* households having cultivation as their principal occupation. Carting is not pursued as a principal occupation by any family. However, about 61 per cent follow carting as a subsidiary occupation.

(b) Size of holdings and types of service.

The following table shows the distribution of these households according to the size of holding and type of service :

TABLE 3.15

Percentage distribution of households by type of service and size of holding

Type of service	No. of households	Size of holdings (in acres)				
		0—2	2—5	5—10	10—25	25 and above
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1. A	16	Nil	Nil	18·8	68·7	12·5
2. C	25	4·0	32·0	36·0	28·0	Nil
TOTAL ..	41	2·4	19·5	29·3	43·9	4·9

Type A—Those using carts for carrying only their own produce.
Type C—Those carrying their own produce as well as that of other's on hire.

About 39 per cent of the households use the carts exclusively for transporting their own produce while 61.0 per cent use them for carrying their own produce as well as that of 'others' on hire. Of the 25 carters who use carts on hire, 9 belong to roadside villages.

Nearly half of them belong to the larger size of holding *i.e.,* over 10 acres, and about 29 per cent have holdings of 5—10 acres. The percentage of those with holdings of more than 10 acres is 81 among A type and only 28 among C type. This is easy to understand as carts are used as a source of income more by smaller cultivators.

3.9. Particulars of carts

3.9.1. *Period of possession*

The table given below shows the distribution of the carts possessed by the 41 selected respondents by the period of purchase :

TABLE 3.16

Percentage distribution of carts according to the period of possession

Type of service	Total No. of carts	%age in each group (Year)			
		0 –5	5—10	10—20	20 & above
(1)	(2)	(3)	(4)	(5)	(6)
1. A	16	6·3	25·0	37·5	31·2
2. C	25	Nil	28·0	72·0	Nil
TOTAL	41	2·4	26·8	58·5	12·2

Most of the carts are old ones—70.7 per cent are older than 10 years, only 2.4 per cent had been purchased recently, *i.e.,* less than 5 years back. 72 per cent of the C type carters possessed carts 10 to 20 years old. But among A type while 37.5 per cent possessed 10 to 20 years old carts, nearly 31.2 per cent had carts older than 20 years.

3.9.2. *Expectation of life*

The following statement shows the period for which the respondents expect their carts to last with and without major repairs :

TABLE 3.17

Percentage distribution of carts according to the expectation of life

(a) Without major repairs

(Year group)

Type of carter	No of carts	Life period groups in years		
		0—5	5—10	10—15
(1)	(2)	(3)	(4)	(5)
1. A	16	Nil	16	Nil
2. C	25	Nil	25	Nil
TOTAL	41	Nil	41	Nil
(*b*) *With major repairs* :				
1. A	16	Nil	Nil	16
2. C	25	Nil	Nil	25
TOTAL ..	41	Nil	Nil	41

(a) *Without major repairs.*—The respondents expected their carts to last between 5 and 10 years without major repairs. With major repairs, however, they expected them to last between 10 and 15 years. They perhaps prefer to replace them rather than to go in for major repairs.

3.9.3. *Other particulars*

(a) *Capacity.*—Carts are of two sizes, *viz.*, with a capacity of 16 and 14 mds. respectively. In one village, which is located on a pucca road, all the carts have a capacity of 14 mds. In the other villages they have a capacity of 16 mds. Thus the average capacity per cart comes to 15.76 mds. This aspect was also studied when the carters who were bringing produce to the mandi were interviewed. The average quantity per cart, comes to be 11.6 mds. This means under-utilisation of capacity to the extent of about 26.5 per cent. The capacity of the carts operating in the mandi is also near-about the capacity of the carts in the village *i.e.*, about 15.8 mds. on katcha road and 18.2 mds. on pucca road.

(b) *Type of wheels.*—All the carts have wooden wheels with 4" wide iron rings.

(c) *Speed.*—The carts ordinarily move at a speed of 3 miles per hour on a katcha road and 4 miles per hour on a pucca road.

3.10. Employment and income

3.10.1. *Period of employment*

A bullock cart is primarily used for agricultural operations in the village —for carrying manures and fertilisers to the field, produce to the thrashing floor, fodder from the fields and such other purposes. Enquiries at the village level brought out that a cart is used for about 7—10 days in a month, on an average, for such uses.

Besides, a cart is used for incoming and outgoing traffic from the villages. Following statement gives the number of days for which a cart is used for marketing and other purposes, for the previous year and the last month (from the date of enquiry) from the selected respondents :—

TABLE 3.18

Distribution of carts according to period of employment

Type	Number	(a) Last year (per month)		(b) Last month	
		Total no. of cart days	No. of days per cart	No. of cart days	No. of days per cart
(1)	(2)	(3)	(4)	(5)	(6)
1. A	16	31·2	1·9	13	0·8
2. C	25	78·7	3·2	114	4·6
TOTAL	41	109·9	2·7	127	3·1

The average use per cart for the last one year comes to only 2.7 days per month. Even in the busy month, *i.e.*, the month previous to the enquiry, a cart was reported to have been used, on an average, for 3.1 days. The extent of use is much less by those using it for carrying their own produce than those using it for hire also. The average number of days for which a

cart was used by the A type carters comes to 1.9 days and 0.8 days per month for the last year and the last month respectively. The average for C type is 3.2 and 4.6 days respectively.

3.10.2. *Kinds of use*

Appendix I shows the intensity of the use of carts by different types of carters for the incoming and outgoing traffic during the last year.

Only about 5 per cent of carts were used for more than 5 days a month over the last year. ¼th of the carts had been used for 2 to 5 days and the rest for less than 2 days. The intensity was greater in the case of C type where 84 per cent had worked for 2 to 5 days against 56.2 per cent of the A type. Again, the data reveal that most of the carts had been used for 1 to 2 days for marketing purposes and 1 to 2 days for other operations. However, the use for marketing operations is slightly higher by the C type. In the case of two roadside villages, the use of carts was only 2.4 days per month during the last year—1.4 days for marketing and 1 for other purposes. Thus there is no significant difference between the roadside and other villages. Appendix II gives similar figures for the last month.

9.8 per cent of carts were used for over 5 to 10 days and only one cart (*i.e.* 2.4 per cent) for more than 10 days. Half of the carts had been used up to 5 days. But it is interesting to find that about 1/3rd had not been used at all for marketing and transporting outside the villages during the previous month. Among the A type, as many as 81.3 per cent had not worked during the month either for marketing or for other purposes. In the case of the C type carters 20 per cent had worked for 2 to 5 days and 64 per cent for 1 to 2 days for marketing purposes. For other purposes too, only one cart (*i.e.* 4 per cent) worked for over 2 to 5 days and 44 per cent for 1 to 2 days. As such, most of the C type carters used the carts more for marketing purposes than for other purposes. The use of cart in the two roadside villages was for 3.0 days during the last month—1.46 days for marketing and 1.53 days for other purposes.

3.10.3. *Distances covered and hours of use*

The information for this section is available for the distances covered on the days for which carts are used for outgoing traffic. The growers use their carts to take their produce to or bring their requirements from the Tindivanam mandi. The carters of the villages located at a nearby distance from the mandi prefer to return home the same day. The average distance covered by carters of these villages, therefore, comes to the total distance involved in running to and from the mandi. For instance, in case of villages, Malapakkan and Pallipakkam, which are located at a distance of 3 and 9 miles respectively, the average distance covered was reported to be 6 and 18 miles respectively. In the case of other villages, situated at distances ranging from 12 to 17 miles, the average distance covered per day was reported to be the distance involved to reach the mandi.

On an average, about 10 per cent of the carts cover a distance of 6 miles per day, about 27 per cent of 12 miles, but the majority *i.e.*, about 63 per cent cover 15 to 17 miles a day.

The following table shows the overall distribution of carts according to the distance covered per day :

TABLE 3.19

Distribution of carts according to the distances covered per day (Mileage group)

Type or service	0—10		10—15		15 & above		Total
	No.	Av.	No.	Av.	No.	Av.	Average
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1. A	3	6	6	12	7	15·9	12·6
2. C	1	6	5	12	9	16·3	15·0
TOTAL ..	4	6	11	12	26	16·2	14·1

3.10.4. *Feeding charges*

Expenditure on the feeding of cattle is the main item that the maintenance of a bullock cart involves. The average expenditure on this works out to Rs. 44 a month or Rs. 1.50 per day. While 12.2 per cent of the carters reported Rs. 2 per day, more than half *i.e.*, 53.7 per cent mentioned Rs. 1.50 per day. The remaining households reported to be spending less.

3.10.5. *Income*

About 61 per cent of the owners of carts use their carts for occupational purposes as a secondary means of earning. The carts are used generally for carrying traffic to the mandi. The charge depends on the distance of the village from the mandi and the type of road. It varies in the selected villages from 16 nP. per md. to 50 nP.

On an average, carters reported that they were earning about Rs. 159 a year or Rs. 13.50 per month. More than half, *i.e.*, 52 per cent earned over Rs. 200 while 32 per cent had earned between Rs. 100 and Rs. 150 in the last year. 12 per cent reported an income of Rs. 60 to Rs. 70 and one respondent even Rs. 30 for the year. During the last year, incomes of carters in the near-road villages varied from Rs. 30 to Rs. 200. In one of these two villages, all the carters earned Rs. 200 during the last year.

Even during the busy months the average earning per carter was reported to be Rs. 18.5 per month. Earnings of carters in the farther villages, *viz.*, Kadivampakkam, Karathai and Vannipair, came to an average of Rs. 20 per month, and ranged between Rs. 6 and Rs. 9 per month in the nearer villages *viz.*, Pallipakkam and Melpakkam. In one of the road-side villages all the carters earned Rs. 20.

3.11. Role of trucks

The analysis of outgoing and incoming traffic brings out that bullock carts continue to be practically the only mode of transport for the movement of agricultural produce from the villages to the mandi as well as for the inward traffic of common goods to the villages. The enquiry at the village level revealed that except in the case of one village, *viz.*, Vannipair, the trucks have seldom visited these villages. Even in the case of Vannipair, where normally one truck goes daily, the truck is used for bringing

white clay from the village and not for transporting either agricultural or other goods.

Some other factors, *e.g.*, smallness of the bulk, the spread over of the marketing period, the possession of carts by the villages, lack of marketing organisations also stand in the way of mechanical transport.

The replies from the respondent households confirmed the view that in the present circumstances there are no immediate prospects of mechanical transport ousting the bullock cart. The roads are katcha and narrow and unfit for plying trucks. The economic conditions, *e.g.*, smallness of the bulk of the produce spread over a period, availability of idle bullock power, lack of marketing cooperative, are other factors favouring the use of a bullock cart.

The producers have only small quantities of surplus for which they are unable to use mechanised transport. The 'plough bullocks' can be usefully engaged for this work. Due to the absence of marketing co-operatives in the mandi, individuals have to carry their own produce to the market by bullock carts. In the absence of marketing co-operatives, the commodities are not assembled in sufficiently large quantities to make truck transport worthwhile.

APPENDIX I

Percentage distribution of carts according to the days of employment for marketing and other purposes

LAST YEAR

(No. of days in groups)

Type	Purpose	Total No.	Nil	Less than 2	More than 2 to 5	More than 5 to 10	Av. no. of days per month	%age to all purposes
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1.A	(*a*) Marketing operations	16	—	100	Nil	Nil	1·0	51·9
	(*b*) Other operations	16	6·2	93·8	—	—	0·9	48·1
	(*c*) All purposes	16	—	43·8	56·2	—	1·9	100·0
2.C	(*a*) Marketing operations	25	—	80·0	20·0	—	1·8	56·5
	(*b*) Other operations	25	4·0	84·0	12·0	—	1·3	43·5
	(*c*) All purposes ..	25	—	8·0	84·0	8·0	3·1	100·0
All	(*a*) Marketing operations ..	41	—	87·8	12·2	—	1·5	55·2
	(*b*) Other operations	41	4·9	87·8	7·3	—	1·2	44·8
	(*c*) All purposes ..	41	—	22·0	73·1	4·9	2·7	100·0

APPENDIX II

Percentage distribution of carts according to days of employment for marketing and other purposes

LAST MONTH

(No. of days in groups)

Type	Purpose	Total No.	Nil	More than 0 to 2	More than 2 to 5	More than 5 to 10	More than 10 to 20	Av. No. days per month	%age all purposes
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1.A	(*a*) Marketing operations	16	87·5	—	12·5	—	—	0·5	61·5
	(*b*) Other operations	16	87·5	6·2	6·2	—	—	0·3	38·5
	(*c*) All purposes	16	81·3	—	18·7	—	—	0·8	100·0
2.C	(*a*) Marketing operations ..	25	4·0	64·0	20·0	12·0	—	2·9	63·8
	(*b*) Other operations ..	25	48·0	44·0	4·0	—	4·0	1·7	36·2
	(*c*) All purposes	25	4·0	28·0	48·0	16·0	4·0	4·6	100·0
All	(*a*) Marketing operations ..	41	36·6	39·0	17·1	7·3	—	2·0	65·8
	(*b*) Other operations	41	63·4	29·3	4·9	—	2·4	1·1	36·2
	(*c*) All purposes	41	34·2	17·0	36·0	9·8	2·4	3·1	100·0

CHAPTER 4

Case Study of Lasalgaon Mandi

I. Traffic & Transport in the Mandi

4.1. Incoming traffic

4.1.1. *Volume and composition*

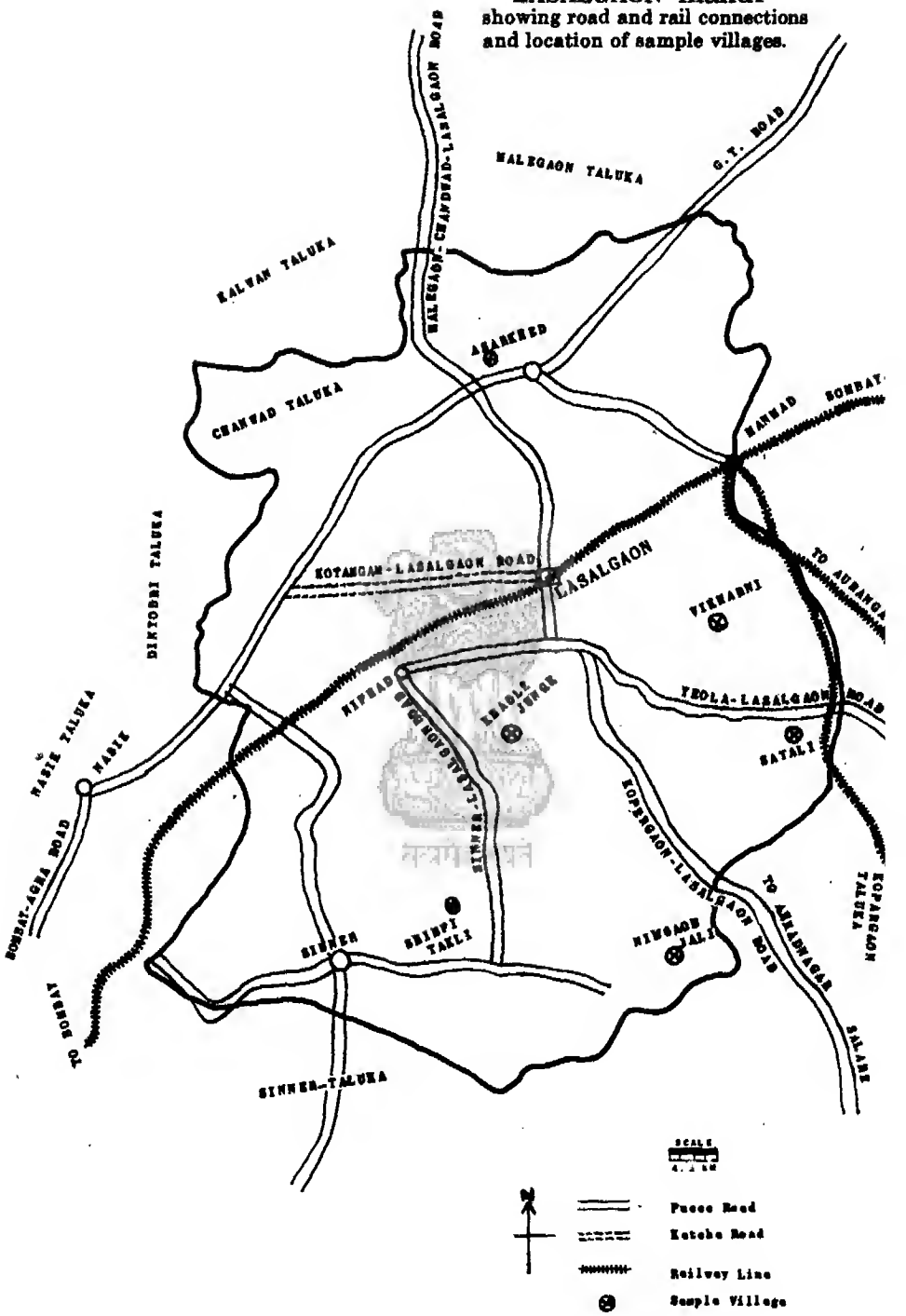
Figures of incoming traffic of different commodities by road during 1949-50 and 1959-60 are given below in Table 4.1 There are no arrivals by rail.

Table 4.1
Incoming traffic in principal commodities

Commodity	1949-50		1959-60		% change during the period
	Quantity (Mds.)	% to total	Quantity (Mds.)	% to total	
(1)	(2)	(3)	(4)	(5)	(6)
1. Groundnut ..	11,81,045	39·4	2,86,966	21·5	+58·5
2. Gur	56,836	12·4	1,53,550	11·5	+170·1
3. Onion	2,21,115	48·2	7,94,034	59·3	+259·1
4. Jowar	Nil	Nil	29,887	2·2	—
5. Bajra	Nil	Nil	10,914	0·8	—
6. Wheat	Nil	Nil	62,182	4·7	—
Total ..	4,58,996	100·0	13,37,533	100·0	191·4

Some significant differences in the nature and composition of this traffic are noticeable as between these two years. First, there has been a considerable increase in the volume over the ten years. The total quantity has increased nearly three times from 4.6 lakh mds. to 13.4 lakh mds. Secondly, while no foodgrain crops were received in this market in 1949-50 as these commodities were, in those days of control, directly purchased by the State Government from the cultivators, some traffic in food crops was reported in 1959-60. Excluding about a lakh maunds of foodgrain crops received in 1959-60, the traffic in other crops, figuring in both the years, comes to 12.4 lakh mds. in 1959-60, or two and a half times that in 1949-50. The traffic in onions has gone up by more than 2½ times, that of gur has been more than doubled while that of groundnut rose by 58.5 per cent. Consequently, onions constitute about 59 per cent of the traffic as against 48 per cent in 1949-50, groundnuts and gur 21 and 11 per cent respectively as compared with 39 per cent and 12 per cent in 1949-50.

Sketch map of the hinterland
of
LASALGAON mandi
showing road and rail connections
and location of sample villages.



4.1.2. *Seasonal variations*

The following table shows the distribution of traffic among the four quarters of the year :

TABLE 4.2

Seasonal Distribution of Incoming Traffic

Quarters	1949-50		1959-60	
	Quantity (Mds.)	% to annual total	Quantity (Mds.)	% to annual total
(1)	(2)	(3)	(4)	(5)
I. Jan. March	1,86,235	40·5	6,33,036	47·3
II. April-June	60,891	13·3	2,19,347	16·4
III. July-September	17,867	3·9	44,519	3·3
IV. October-December	1,94,003	42·3	4,40,631	33·0
TOTAL ARRIVALS	4,58,996	100·0	13,37,533	100·0

There is a marked concentration of traffic in the first and fourth quarters which together account for 80 per cent of the total. This is due to the fact that October to March is the busy season for the marketing of groundnuts and onions which constitute the bulk of the marketed production. This was also borne out by the traffic count. According to this survey, the bulk of the marketable surplus is received in the mandi during November to April. About 2/3rds of onion arrive during November and December while the remaining is received during March and April. In the case of gur, of the bulk is received in January and February. The overall pattern of the quarterly flow of traffic has not undergone much change since 1949-50 except that the fourth quarter's share has declined a little whereas the shares of first and second quarters have gone up to some extent.

In order to know the variations in the traffic during the course of the year, data were collected for the busy and slack seasons. The busy season, as reported by respondents, extends over two to four months and in a few cases even longer, but three months, *i.e.,* November, December and January have been reported by the majority of the respondents. The slack season also varies from respondent to respondent but the months of July to October constitute the slack season generally.

The following table shows the number of visits per month made by the sample carters during the busy and the slack seasons.

TABLE 4.3

Distribution of carters by the frequency of trips per month
(No. of carters in different trip frequency groups)

Type of operator	Busy season				Slack season		
	No.	Nil	1 and less than 1	2—5	Nil	1 and less than 1	2—5
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1. Private	19	—	17	2	9	10	—
2. Public	2	—	2	—	1	1	—
TOTAL ..	21	—	19	2	10	11	—

There is a marked difference in the frequency of trips between busy and slack months. Two out of 21 carters came to the mandi 2–5 times per month in the busy season but none during the slack season. On the other hand, 10 carters did not come to the mandi at all during the slack months but none was in this category during the busy season.

4.1.3. *Frequency of monthly trips and distance groups*

Appendix I gives the classification of visits to the mandi during the busy and the slack seasons according to distance groups.

14 *i.e.*, 66 per cent of the carters came from a distance range of 10-20 miles. 13 and 7 of them paid one or even less than one visit during the busy and slack seasons respectively. The next important distance range group is 5–10 miles as 6 carters were reported to be coming from this range, 5 and 3 carters paid one or even less than one visit in the busy and slack seasons respectively. Only one carter came from a distance of over 20 miles.

4.1.4. *Types of roads*

An overwhelming proportion of traffic is brought to the mandi on pucca roads though it has come down a little as compared to 1949-50, namely, from 89 per cent to 85 per cent—the absolute figures being 4,10,000 mds. and 11,33,000 mds. respectively. The volume of trade moving on katcha roads has risen by three times, *i.e.*, from 48,996 mds. to 2,04,533 mds. and that on pucca roads by a little less, *i.e.*, from 4,10,000 mds. to 11,33,000 mds.

4.2. Outgoing traffic

4.2.1. *Volume and composition*

The following table shows the nature and composition of the outgoing traffic of this mandi :

TABLE 4.4

Volume and composition of the principal outgoing traffic

(Quantity in Mds.)

Commodity	1949-50			1959-60		
	Despatches (Qty.)	% to total dispatches	% to arrivals	Despatches (Qty.)	%to total dispatches	%to arrivals
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1. Groundnut ..	1,71,000	33·3	94·5	86,174	9·7	30·0
2. Gur	1,27,665	24·9	224·6	1,03,894	11·8	67·7
3 Onion	2,14,707	41·8	97·1	6,19,329	70·0	78·0
4. Wheat	Nil	—	Nil	41,001	4·6	65·9
5. Jowar & mixed grains	Nil	—	Nil	34,186	3·9	83·8
TOTAL ..	5,13,372	100·0	111·8	8,84,584	100·0	66·1

The total despatches come to about 9 lakh maunds as against 5 lakh maunds 10 years back. By far the most important commodity despatched is onion accounting for about 70.8 per cent of the total despatches. Next in importance is gur. Its quantity comes to about 12 per cent of the total.

Other commodities despatched are groundnut, wheat and mixed grains. Onion was the most important commodity among the despatches from this mandi ten years back also. But its relative importance was much less as it used to account for only 42 per cent of the total. Next in importance was groundnut with 33 per cent followed by gur with about 25 per cent.

The outgoing traffic constitutes about 66 per cent of that which comes in, varying from 30 per cent to 84 per cent in different commodities. The pattern in 1949-50 was very different, the proportion of despatches being much higher. In the case of gur, despatches were more than double of arrivals indicating a large carry-over from the previous year. The role of the market as a distributing centre has become more important.

4.2.2. *Seasonal variations*

About 38 per cent of the traffic occurs in the first quarter and the remaining is evenly distributed during the other three quarters, each sharing about 20 per cent of the total. Thus the traffic is the most brisk during the first quarter as it accounts for 47 per cent of incoming traffic and 38 per cent of the outward traffic. This is the time when the demand for transport is at its peak. Next in importance is the last quarter when incoming traffic is 33 per cent and outward 22 per cent. Ten years back, there used to be greater variations in the flow of outward traffic during the different quarters. The largest proportion was even then in the first quarter, namely, about 36 per cent. But, the fourth quarter accounted for about half of the remainder.

4.3. Transport organisations

There are three associations assisting the operators or operations of transport. These are : (1) The Merchants' Association, (2) The Luggage Transport Union and (3) The Cart Owners and Cartmen's Association. The Merchants' Association was established in 1940 and has 54 members. The association does not directly operate transport vehicles. Its main object is to render legal assistance and offer other amenities to those operating some type of transport. The Luggage Transport Union was established in 1952 and has 14 members. It does not own vehicles but handles transport business on commission basis. The Cart Owners and Cartmen's Association was established in 1946 and has 30 members on its roll. As in the case of the other two associations, this association also does not own or operate any transport vehicles. The income of its members received from work in the mandi is pooled and distributed among the cartmen.

4.4. Modes of transport

4.4.1. *Intra-mandi movements*

Trucks play a very insignificant part in meeting the transport requirements of the mandi. They handle only about 2 per cent of the goods moved from the market yard to the rail-head and about 5 per cent and 2 per cent respectively of that moved from shops and the commission agents to the mills and the rail-head. The rest of the work is handled by bullock carts.

4.4.2. *Incoming traffic*

(a) *Role of carts.*—The following table shows the relative importance of carts and trucks in the movement of traffic to this mandi roadwise and commodity-wise in the years 1949-50 and 1959-60 :

TABLE 4.5

(i) *Percentage carried by carts and trucks on different types of roads*

Type of road	1949-50			1959-60		
	Carts	Trucks	Total	Carts	Trucks	Total
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1. Katcha	90·7	9·3	10·7	74·0	26·0	15·3
2. Pucca	82·7	17·3	89·3	69·7	30·3	84·7
TOTAL ..	83·5	16·5	100·0	70·4	29·6	100·0

(ii) *Incoming road traffic (by commodities) handled by carts*

Commodity	1949-50		1959-60	
	Quantity (Mds.)	Percentage	Quantity (Mds.)	Percentage
(1)	(2)	(3)	(4)	(5)
1. Groundnut	1,50,940·5	83·4	2,09,671·1	73·1
2. Gur	50,744·2	89·3	1,16,195·0	75·7
3. Onion	1,81,753·5	82·2	5,23,323·8	65·9
4. Wheat	Nil	—	55,429·9	89·1
5. Jowar	Nil	—	26,733·8	89·4
6. Bajra	Nil	—	10,177·4	93·3
TOTAL	3,83,438·2	83·5	9,41,524·0	70·4

Of the total traffic by roads, trucks account for 30 per cent and carts for 70 per cent. Though the share of trucks is proportionately greater on the pucca roads, the difference is not marked, being 30 and 26 per cent on pucca and katcha roads respectively. The trucks have gained over carts during this period both on kutcha and pucca roads.

Though the overall share of carts has decreased from 84 per cent to 70 per cent, the quantity handled by them is about 2½ times as much as it used to be in 1949-50. Part of the increase in the truck-borne trade may be thus due to the fact that the number of carts failed to keep pace with the increase in trade.

But there are great variations in the number arriving day-to-day and in the proportions of carts and trucks. Thus on the days of the traffic count, 78 carts and 7 trucks arrived on one day and 127 carts and 5 trucks on the other day.

The decline in the share of carts has occurred in respect of all the three commodities which were handled in both the years. But it is the most marked in regard to onions and the least in groundnuts. Carts handle the bulk of the arrivals of food crops.

A much larger proportion of traffic takes place by carts during the slack quarters (second and third) than during the busy ones. This is easy to

understand as the limited quantity of traffic during the slack months enables the cultivators to transport them by carts. The proportionate share handled by carts has declined in the first, second and fourth quarters by 16.3 per cent, 5.4 per cent and 11.7 per cent respectively. In the case of the third quarter, the increase in the proportion of traffic carried by carts is negligible. This shows the extent of the total quantity handled by carts—77 per cent is handled in the first and 4th quarters now as against 82 per cent in 1949-50.

(b) *Distance groups.*—The following table shows the percentage of incoming traffic during 1949-50 and 1959-60 according to seasons and distance groups :

TABLE 4.6

Percentage of traffic handled by carts 1949-50 *and* 1959-60

Distance groups	1949-50				1959-60			
	Jan. to March	April to June	July to Sept.	Oct. to Dec.	Jan. to March	April to June	July to Dec.	Oct. to Dec.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1. Less than 5 miles ..	90	96	96	90	86	90	90	86
2. 5—10 ..	90	93	93	88	81	85	90	80
3. 10—20 ..	90	93	93	88	75	80	90	75
4. 20—50 ..	78	86	86	78	70	70	88	72

The proportion of trade handled by trucks is much larger in the distance groups beyond 10 miles than in the lower groups, ranging from 10 to 30 in the former as against 10—20 in the latter. Ten years ago, the difference in distance groups was very marked, namely, 7 to 22 in the latter and 4—12 in the former. Thus, though the percentages of the highest group have gone up to some extent, those in the lower ones have gone up to a greater extent, thereby bridging the difference to some extent. During both the years the percentage handled by trucks is higher in the first and the last quarters than in the second and third, *i.e.,* April to September.

4.4.3. *Outgoing traffic*

Of the total outgoing traffic, about 27 per cent are sent by road and 73 per cent by rail. The proportion sent by road varies greatly between different commodities ranging from about 13 per cent in the case of onions to 88 per cent in the case of gur. Corresponding figures for 1949-50 are not available for all the commodities. In the case of gur, there has been a very large shift from rail to road, the percentage share of the former having declined from 89 to 13. Also the absolute quantity which was transported by rail has fallen from over a lakh mds. to 13,000 mds. All the traffic by Pucca road is sent by trucks now as in 1949-50.

There has been no change in the mode of transport so far as despatches are concerned during the last 10 years. For despatches the competition is between trucks and rail—73 per cent of the commodities are rail-borne and 27 per cent are borne by trucks. Ten years back it was estimated that about 90 per cent of the commodities from this mandi were rail-borne and 10 per cent was carried by trucks.

4.5. Economic characteristics of transport workers

4.5.1. *Number and type*

Carters and truckers have been classified into the following three types : A—Those who are private carriers and are carrying their own produce only; B—Those who are public carriers and carry others' produce on hire; C—Those who carry their own as well as others' produce.

30 cartmen and 14 truckers were residing within the mandi area or within 1-2 miles on the date of interview. There is no cartmen of types A and C and no trucker of type A. There has been little change in the nature of work done by carters though their number has increased from 20 in 1949-50 to 30 in 1959-60. The number of truckers has risen from 4 to 14. 19 of 21 carters who brought goods to the mandi were of A type and 2 of B type.

4.5.2. *Occupational distribution*

Almost all (24) cartmen in the mandi had transport work as their principal occupation as against 9 or 64.3 per cent among the truck operators. Of the 21 carters who brought goods to the mandi, 19 or over 90 per cent had cultivation as their principal occupation while 8 or 67 per cent of the truckers had transport as their principal occupation.

Most of the carters (71 per cent) in the mandi depend exclusively on carting, others have cultivation as subsidiary occupation. About half the truck operators had some subsidiary occupation or the other.

Of the carters coming to the mandi from outside 19 had cultivation and 2 had carting as principal occupation. They did not have any subsidiary occupation. As for truckers, one-third had no subsidiary occupation while 25 per cent had cultivation as subsidiary occupation.

4.5.3. *Occupational standing*

Information was gathered on the length of the period during which the principal hauliers had been in this occupation in the mandi. This is classified in the table below :

TABLE 4.7

Classification of principal hauliers by the length of service

Type of operator	Period since engaged (Years)				
	Less than 2	2-5	5-10	Above 10	Total
(1)	(2)	(3)	(4)	(5)	(6)
1. Bullock carter	1	11	6	6	24
2. Track operator	4	2	1	2	9

The bullock carters have generally been longer in the occupation than the truck operators. Among the former, 50 per cent have been engaged in this work for over 5 years as against only 33 per cent of the truck operators.

4.5.4. *Types of vehicles used*

(a) *Ownership.*—Of the 24 bullock carters in the mandi, whose principal occupation is hauling, 20 own their carts and 4 have hired their vehicles. The respondent having hauling as his subsidiary occupation also owns the cart. All the truck operators in the mandi own their trucks.

All the 21 carters, who were interviewed while bringing produce to the mandi, had carts which were owned by them. As far as trucks are concerned, all the 12 operators were using their own vehicles.

(b) *Make.*—All the cart owners or hirers in the mandi as also those who brought goods from outside have only old type of vehicles.

(c) *Period of running.*—Almost all the owner-carters in the mandi have owned their vehicles for fairly long periods, 8 or 40 per cent for over 10 years, 4 or 20 per cent for over 5 years. Similarly, 4 or 45 per cent of the truck owners have been owning the vehicle for over five years.

(d) *Capacity of vehicles.*—The following table shows the utilization of the capacity of the carts bringing goods from outside :

TABLE 4.8

Utilisation of the capacity of carts by different categories of carters

Category of operators	Number	Less than ½ capacity		½ to ¾th capacity		¾th to full capacity		Above full capacity	
		No.	%	No.	%	No.	%	No.	%
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1. Private ..	19	1	5·3	5	26·3	11	57·9	2	10·5
2. Public ..	2	—	—	—	—	2	100·0	—	—
TOTAL ..	21	1	4·8	5	23·8	13	61·9	2	9.5

Public carts are used much more fully than the private ones. None of them was found carrying less than ¼th of its capacity, while of the private ones only 58 per cent fall in this category. Of the remaining 8, one carried even less than half its capacity, 26 per cent were loaded only up to ½ to ¾ths of their capacity while 10 per cent took more weight than their capacity. Taking both types, about 62 per cent of the carts carried weight between ¾th to full capacity, but the private carts are not used fully. This points to the possibility of saving in transport resources, *e.g.*, carts and bullocks by a consolidation of freight lots, either by combination amongst prospective users of carts or by reducing the frequency of trips.

4.5.5. *Employment pattern*

(a) *Full-time workers.*—A manday is defined as the equivalent of eight hours of work by a haulier. The respondents were asked to state the days worked by them in their occupation for hauling agricultural commodities on a full-time basis during the preceding month. The data are presented below :

TABLE 4.9

Mandays worked during the last month on the transport of agricultural commodities

Type of Occupation	Type of transport worker	No. of respondents engaged during the last month				Average days employed in the last month
		Less than 20 days	20-25 days	25 mandays and above	Total	
1. Principal	Bullock carter	2	4	18	24	25·54
	Trucker	3	—	—	3@	7·70
2. Subsidiary	Bullock carter	1	—	—	1	8·00
	Trucker	3	—	—	3*	12·00

The bullock carters who follow this profession principally get work almost throughout the month. But the truck operators who had transport as their principal occupation were employed in this type of work for a few days only as transport of industrial goods might have been more lucrative. The bullock carters who are doing transport work as a side income were naturally employed for a few days. But in regard to the truck workers for whom transport is a subsidiary occupation the figures of employment in transport of agricultural work were higher than for those engaged principally in it because the former probably confine themselves to local transport work in the mandi and do not undertake long distance transport of industrial commodities. Moreover, all the three subsidiary truckers have commission agency as their principal occupation. This might have given them better clientele.

(b) *Part-time workers.*—Similar data were collected for part-time workers. Fifteen principal bullock carters do not undertake part-time hauling work, as also six principal truckers. Two out of five subsidiary truckers do not undertake part-time hauling work.

@Six truckers are not using their vehicles for movement of agricultural commodities.
*Two are not using their vehicles for movement of agricultural commodities.

II. VOLUME OF TRAFFIC AND MODES OF TRANSPORT IN THE VILLAGES

4.6. Incoming traffic

4.6.1. *Volume*

Both industrial and agricultural commodities were reported to have been imported in the villages. The following table shows the volume of incoming traffic to the selected villages in 1954-55 and 1959-60 :

TABLE 4.10

Volume of incoming traffic

(Quantity in mds.)

Commodities	1954-55 (Qty.)	1959-60 (Qty.)	%age increase
(1)	(2)	(3)	(4)
1. Agricultural (Rice, Bajra & Jowar)	130	265	103·9
2. Industrial (Fertilizers and oil cakes) (for 4 villages only)	5,525	11,240	103·4
TOTAL	5,655	11,505	103·4

Fertilizers and oil cakes remain the main constituents of the incoming traffic. The imports of rice, bajra and jowar though still insignificant in proportion, were higher by 104 per cent in 1959-60. Fertilizers and oil cakes (as available for four villages) registered a rise of 103.4 per cent. On the whole, the imports have more than doubled during the course of five years.

4.6.2. *Origin*

Commodities in the villages are also brought from the nearby sub-market or mandi (whichever is nearer), as figures in Appendix II show.

Overall, 71.4 per cent of the incoming traffic come by carts and 28.6 per cent by trucks. In one of the roadside villages nearly 64 per cent of the incoming traffic was brought by trucks and in the other village situated near pucca road none came by trucks as all the imports came from the mandi which is situated near the village.

In three villages, all imports came from the nearby yard/mandi, which was at a distance of 5 to 12 miles. Where the distance does not exceed five miles, only carts are used. In one village, the entire requirements came by truck as the whole distance is served by a pucca road, while in 2 villages only 20 per cent and 4 per cent are brought by trucks as the major distance is by katcha road.

19.6 per cent of the incoming traffic came through katcha road and 80.2 per cent on mixed, *i.e.*, katcha and partly pucca roads.

The commodities were brought mostly from the sub-mandis near the villages. About 2/3rds (67.6 per cent) came from distances of 10—15 miles, about 21.8 per cent from places within 2—5 miles. Only 2.5 per cent were brought from distant places, *i.e.*, above 15 miles.

4.7. Outgoing traffic

4.7.1. *Volume and composition*

The following table shows the nature and volume of the outgoing traffic :

TABLE 4.11

Volume and composition of the outgoing traffic

(Quantity in mds.)

Commodities	5 years back (Qty.)	1959-60 (Qty.)	% age change
(1)	(2)	(3)	(4)
1. Onion	24,850	56,300	126·6
2. Gur	16,925	23,300	37·7
3. Groundnut	11,250	10,350	(—)8·0
4. Cotton	Nil	2,500	N.R.
5. Wheat	5,500	6,900	25·5
6. Bajra	3,050	2,550	(—)16·4
7. Jowar	1,500	1,200	(—)20·0
TOTAL ..	63,075	1,03,100	63·5

Onion, gur, groundnut, and cotton among the cash crops and wheat, bajra and jowar among the food crops, are the principal commodities constituting outgoing traffic. Onion, gur and groundnut account for about 87 per cent of the total volume of outgoing traffic. Onion alone claims 54.6 per cent.

The outgoing traffic has gone up by about 64 per cent during the last five years. Most of this increase is due to a meteoric rise in the case of onion and to a large rise in gur and wheat. Cotton has been added to the list of commodities included in the outgoing traffic during this period. There was a slight decline in the export of bajra and jowar. The change was most conspicuous in one village Asarkhed, where the rise was over three times during 1949-50 to 1954-55 and over five times in the next five years.

4.7.2. *Seasons*

The kharif crops account for 80 per cent of the total exports and the rabi crops for about 20 per cent. Thus, most of the exports take place during the months of October to March—the busy months being December and January for onion and groundnut and December to March for gur. Wheat is mostly carried to the markets in the months of March to May. Some onion is exported during the months of April to August also.

4.7.3. *Method of marketing*

It is gratifying that nearly the whole of the marketable surplus is taken by the growers themselves to the markets. Only in two villages, one of them being a roadside village, 2 per cent to 5 per cent of the produce is reported to be collected by the itinerant traders. Most growers take their produce in their own carts as the carts in the villages are used by the owners exclusively for carrying their own produce.

4.7.4. *Distances*

The following table shows that a major portion of the outgoing traffic from the selected villages (amounting to 103,100 mds. and 42,529 mds. from selected villages and selected households respectively) is sent to the sub-market yards located nearer to the villages than the selected mandi :

TABLE 4.12

Percentage of outgoing traffic to selected mandi and the sub-market

Villages	Distance to		Villages		Households	
	Mandi	Sub-market yard	%age of total exports to Lasalgaon	%age of exports to sub-market yards or other nearer market	%age of exports to Lasal-gaon	%age of exports to sub-market yards or nearer market
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1.	16	4	34·5	65·5	38·9	61·1
2.	25	5	0·8	99·2	—	100·0
3.	18	5	25·0	75·0	27·8	72·2
4.	36	12	13·3	86·7	—	100·0
5.	12	12	100·0	—	100·0	—
6.	15	12	52·0	48·0	63·7	36·3
TOTAL	..	..	42·5	57·5	54·7	45·3

The distribution of outgoing traffic between Lasalgaon and nearer market yards, as obtained for the villages and from the selected respondents, shows similar pattern as is clear from the table. The cultivators prefer to send their commodities to the nearer places of sale showing that either price differences are not adequate or that they are not sufficiently price-conscious. In the case of village 5, the whole of the volume of outgoing traffic is sent to Lasalgaon, as it happens to be the nearest mandi to the village and from village 6, the growers prefer to go to the Lasalgaon mandi as the difference in distance with the near mandi is short and the growers expect more reasonable price there. Before the opening of sub-market yards in the hinterland (which were started only recently *i.e.*, the last 2-3 years) nearly the whole of the produce was sent to the Lasalgaon mandi.

4.8. Households possessing carts

4.8.1. *Total*

In the six sample villages, 354 households were found possessing carts. The percentage was as high as 52.2 per cent in Khadle Junge and as low as 23.2 per cent in Vikharni. In the two roadside villages, the percentages were 40.2 and 41.0 respectively.

The following table shows the relationship between the number of carts and volume of outgoing traffic :

TABLE 4.13

Number of carts and annual volume of outgoing traffic

	10 yrs back	5 yrs back	At present	% of increase over last 5 years	% increase over 10 years
(1)	(2)	(3)	(4)	(5)	(6)
1. No. of carts ..	275	331	366	10·6	33·1
2. No. of owners ..	N.A.	N.A.	354	N.R.	N.R.
3. Total qty. of exports from selected villages (mds.) ..	N.A.	63,075	103,100	63·5	N.A.
4. Volume of exports per cart (mds.) ..	N.A.	190·5	282	48	N.A.

The annual volume of outgoing traffic from these villages has increased by about 64 per cent over the last five years. As the number of carts has increased by about 11 per cent only, the intensity in the use of carts has increased considerably, by 48 per cent.

4.8.2. *Selected households*

(a) *Occupational distribution.*—106 households, *i.e.*, 30 per cent of total were selected on a random basis for intensive enquiry relating to the type of carts possessed, the extent and nature of carts possessed, the extent and nature of their use for transport purposes and the economics of their operation.

The following table shows the occupational distribution of the selected cart-owning households :

TABLE 4.14

Distribution of selected households by subsidiary occupation

Principal occupation	No. of households	Distribution according to first subsidiary occupation				
		Cultivation	Transport	Agri. labour	Trader	Nil
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1. Cultivation	105	—	9	3	1	92
2. Others (School teacher)	1	1	—	--	--	

All households which possess carts belong to the cultivating class, have cultivation as their principal occupation except one whose head is a school teacher. But its family has cultivation as the subsidiary occupation. Thus, carting is not followed as a principal occupation by any. Only 9 or 8.5 per cent have carting as a subsidiary occupation while two households had transport as a second subsidiary occupation.

(b) *Size of holdings and types of service.*—The following table shows the distribution of the selected households according to the size of holdings and type of service :

TABLE 4.15

Percentage distribution of households by type of service and size of holding

Type of service	No. of House-holds	Size of holding (in acres)				
		0-2	2-5	5-10	10-25	25 & above
			(Percentages)			
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1 A	80	—	2·5	8·8	61·2	27·5
2 C1	11	—	27·3	54·5	18·2	—
3 C2	15	—	6·7	—	73·3	20·0
TOTAL	106	—	5·7	12·2	58·5	23·6

Type A=Those using carts for carrying their produce only.
Type C1=Those carrying their produce as well as that of others on hire.
Type C2=Those carrying their own produce as well as that of others but not on hire.

Nearly 3/4ths of the households use carts exclusively for transporting their own produce and the remaining 24 per cent use them for transporting their own as well as others produce. But it is interesting to find that, of these, about 57.7 per cent (and most of them have large holdings) transported others' produce not for any pecuniary advantage or as a source of occupation. It is only 10 per cent of the total households who use the carts as a subsidiary occupation. Of the 11 carters who use carts on hire, 4 belong to roadside villages.

82 per cent have holdings of over 10 acres, 58.5 per cent being in the 10—25 acres group and 23.6 per cent having holdings of more than 25 acres. 82 per cent of C1 category belong to the relatively lower size of holding group, *viz.* below 10 acres whereas 89 per cent of A category have holdings above 10 acres.

4.9. Particulars of carts

4.9.1. *Period of possession*

The following table shows the distribution of 108 carts possessed by 106 selected respondents by the period of possession :

TABLE 4.16

Percentage distribution of carts according to the period of possession

Type of Service	Total no. of carts	Percentage distribution by period group (Years)			
		0-5	5-10	10-20	20 & above
(1)	(2)	(3)	(4)	(5)	(6)
1 A	82	29·3	34·1	34·1	2·5
2 C1	11	45·4	18·2	36·4	—
3 C2	15	46·6	26·7	26·7	—
TOTAL	108	33·3	31·5	33·3	1·9

Thus, about 1/3rd of the carts were relatively new, *i.e.*, less than 5 years' old; about 1/3rd had been purchased 10—20 years ago. The percentage of older carts (over 5 years) is much higher in A category than in others.

4.9.2. *Expectation of life*

The following table shows the period for which the respondents expect their carts to last with and without major repairs :

TABLE 4.17

Percentage distribution of Carts according to the expectation of life

Type of carter	No. of carts	Year groups					
		0-5	5-10	10-15	15-20	20-25	25-30
Without major repairs							
1 A ..	82	7·3	39·0	42·7	7·3	3·7	—
2 C1 ..	11	—	45·5	45·4	—	—	9·1
3 C2 ..	15	13·3	33·3	46·7	6·7	—	—
TOTAL	108	7·4	38·9	43·5	6·5	2·8	0·9
With major repairs							
A ..	82	—	18·3	47·6	24·4	6·1	3·6
C1 ..	11	—	9·1	54·5	27·3	—	9·1
C2 ..	15	—	20·0	60·0	20·0	—	—
TOTAL ..	108	—	17·6	50·0	24·0	4·6	3·8

About 54 per cent of the carts are expected to last for more than 10 years without major repairs. With major repairs, however, the corresponding percentage is 82. The percentage of carts expected to last 15 years without repairs is much higher in regard to those possessed by A category as probably, these are put to less strenuous use. With major repairs this picture is also different as those who use it for their own purposes, belonging as they do to higher holding groups, probably prefer to replace them rather than go in for major repairs.

4.9.3. *Other particulars*

(a) *Capacity.*—Generally there are two sizes of carts—smaller ones with a capacity of 12 mds. and larger ones with a capacity of 15 mds. The number of each category among the sample carts was found to be equal. In four villages both types of carts were used. In two, *viz.*, Khadlejunge and Vikharni lying in the interior, all carts were of the small size. The average capacity per cart on this basis comes approximately to 13.5 mds. According to the information gathered in the mandi at the time of the traffic survey, a cart on an average was found to be containing about 10.2 mds. This comes to 75.6 per cent of the capacity reported in the villages, *i.e.*, an underutilisation by about 24.4 per cent.

(b) *Types of wheels.*—All the carts have ordinary wooden wheels with 2 in. wide iron rings. Rubber tyres are not considered useful since the carts have to be plied on katcha roads.

(c) *Speed.*—The carts ordinarily move at a speed of 1 to 2 miles per hour on a katcha road and 2 to 3 miles per hour on a pucca road.

4.10. Employment & income

4.10.1. *Period of employment*

In order to obtain an idea as to how much a cart is used, the selected respondents were asked to report the number of days they used their carts during the previous year and the previous month for marketing and other operations. The replies given are tabulated below :

TABLE 4.18

Period of employment of carts

Type	Number	(a) Last year (per month)		(b) Last month	
		Total no. of cart days	No. of days per cart	Total no. of carts days	No. of days per cart
(1)	(2)	(3)	(4)	(5)	(6)
1 A	82	1,114·3	13·6	1,761	21·5
2 C1	11	152·4	13·8	273	24·8
3 C2	15	117·2	11·8	332	22·1
TOTAL	108	1,443·9	13·4	2,366	21·9

During the previous year, a cart was used, on an average, for about 13 days a month which roughly represents the extent of use by A type of carters. C1 type carters use the carts for almost the same period but the use in the case of C2 type is a little less.

During the last month, which was a busy season for marketing, the average number of days for which carts were used was about 22. The use with C1 type was the maximum, *i.e.*, about 25 days. During the last month the carts were used for about 60 per cent more days than in the last year in the case of A type carters. It was higher by 80 per cent or above in the case of the C1 and C2 types.

4.10.2. *Kinds of use*

Appendix III shows the intensity of the use of carts by different types of carters and for different purposes during the last year.

Taking all types of carts, only 5 per cent carts were used during the last year for over 20 days in a month, 37 per cent were used for 15—20 days or about 16 days per month on an average. They are used more often for other purposes than for marketing. Out of the average of 13 days, 35.8 per cent time was used for marketing purposes and 64.2 per cent for other purposes. Further C1 type (*i.e.*, those who carry others produce on hire also) use carts for marketing purposes much more than those of A and C2 type carters. This is natural as carts are generally kept for other agricultural purposes. In the two roadside villages, carts were used on an average 11.6 days per month—5.3 days for marketing and 6.3 days for other purposes. Thus there is no significant difference in the use of carts for marketing and other purposes between the roadside and other villages. Appendix IX gives similar figures for the last month.

During the busy month, 73 per cent of the carts are used for over 20 days and rest for 10—20 days, but for marketing purposes, only 15 per cent are used for over 20 days. This means that the busy season for marketing also coincided with the busy season of other work.

The intensity of use is (over 20 days per month) the greatest (100.0 per cent) among C1 carters and the least among A type (67.1 per cent) and that too because of marketing operations mostly.

As the statement indicates a greater proportion of days (as compared to the average over the last year) were devoted to marketing operations by all types of carters—the rise was more marked in respect of C2 type. Further, C1 carters used ·¾th of their time for marketing purposes alone. This is also the position in the case of two roadside villages. Here the carts were used for about 22.1 days—12.5 days for marketing purposes and 9.7 days for agricultural and other purposes.

4.10.3. *Distances covered and hours of use*

From the selected respondents, information was gathered about the normal distances covered per day during the busy and slack seasons.

The following table shows the distribution of carts according to the distance covered per day :

TABLE 4.19

Distribution of carts according to the distance covered per day

(Mileage groups)

Types of service	Busy season				Total average	Slack season				Total average
	0-10		10-15			0-5		5-10		
	No.	Avg.	No.	Avg.		No.	Avg.	No.	Avg.	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
1 A ..	50	4.4	32	10·1	6·6	69	3·8	13	5·3	4·4
2 C1 ..	4	7·0	7	11·7	10·0	10	3·4	1	5·0	3·8
3 C2 ..	9	5·9	6	10·7	7·8	9	3·0	6	5·7	4·0
TOTAL	63	4·9	45	10·4	7·2	88	3·7	20	5·4	4·0

On an average, a cart travels about 7.2 miles a day during the busy season and about 4.0 miles (*i.e.*, nearly half) per day during the slack season.

Even during busy season most of the carts, *i.e.*, 58 per cent covered less than 10 miles a day with an average coming to 4.9 miles per day. The remaining travelled just over 10 miles. Those carrying their produce as well as that of others use the maximum, *i.e.*, about 10 miles a day. During the slack season, the majority of the carts (*i.e.*, 81 per cent) were used less than 5 miles a day with an average of 3.7 miles, only 1/5th or so travelled just a little more than 5 miles per day.

Further, a cart is used for nearly 13 hours a day in the busy season as against about 8 hours during slack season. During the busy season none of the possessors used it for less than 8 hours a day. Those using it primarily for carrying their own produce only worked it, on an average for

13.4 hours a day while those running them for hire used them on an average for 12.7 hours a day. In the slack season while the average per day remains the same for C2 type (using for both their own and others' produce) in the case of A type the average comes to only 7.3 hours. Most of these fall in the 4—8 hours per day group.

4.10.4. *Feeding charges*

The feeding of the cattle is the main recurring item of expenditure on a bullock cart. The average expenditure comes to Rs. 110 a month or Rs. 3.67 per day. While about 36.1 per cent of the carters mentioned Rs. 3 per day as expenditure on feeding, about 63 per cent reported Rs. 4 a day.

4.10.5. *Income*

The data relating to expenditure on repairs etc. carried during the previous month indicates that normal expenditure on these items is very small. 68 per cent or 2/3rd of cases reported no expenditure at all and 24 per cent (or ¼th) reported Rs. 1 to 5 at the most.

Only about 10 per cent of the owners of carts among the respondents use their carts for occupational purposes as a secondary means of earnings. The carters are reported to be charging Rs. 2 to Rs. 3 per cart load for mandis situated at a distance of 5 to 6 miles from the villages and Rs. 4 to 5 for distances ranging up to 15 miles. The average charge per maund ranged from 17 nP. to 37 nP. for distances up to 10 miles and 42 nP. to 62 nP. for distances up to 20 miles.

On an average, such cultivator owners earn about Rs. 238 a year or say Rs. 20 a month, which is less than a quarter of the amount needed by them for feeding their pair of bullocks. While nearly half of them (*i.e.*, 45 per cent) reported earnings of Rs. 144 a year, *i.e.*, Rs. 12 a month, the remaining got Rs. 317 a year, *i.e.*, Rs. 26.4 a month on an average. In the two roadside villages, the earnings of the 4 respondents varied from Rs. 120 to Rs. 200 during the last year.

During the busy months, however, the average earning was reported to be Rs. 65 per carter which can meet half the feeding cost of bullocks. One-third of the carters were earning nearly the average though about one-fourth reported to be earning over Rs. 100 a month, with an average of Rs. 115. The remaining four (out of eleven) were earning hardly Rs. 25 on an average. Thus, during the busy season, carting becomes quite a remunerative occupation. This is easy to understand, as carting is not the principal occupation in any case. In the two roadside villages, the carters earned between Rs. 20 and Rs. 30.

4.11. Role of trucks

4.11.1. *Frequency of visits of trucks*

Data collected at the village and the household levels on the frequency of the visits of trucks to these villages, set forth in the following table, bring out that the cart continues to remain the primary means of transport and the use of trucks is quite limited.

TABLE 4.20

Frequency of visits of trucks to selected villages

Village	Distance from mandi		Average intervals in months after which a truck visits the village		
	Pucca road	Total	10 years back	5 years back	At present
(1)	(2)	(3)	(4)	(5)	(6)
1. Asarkhed ..	14	16	Never	4 to 5	2 to 3
2. Shimpi Takli ..	23	25	2	2	2
3. Satali ..	15	18	Never	6	6
4. Nimgaon Jali ..	20	36	Never	2	1
5. Khadlejunge ..	2	12	Never	4	1 to 2
6. Vikharni ..	0	15	Never	Never	3

10 years back except village 2, which is located at a distance of 2 miles from a pucca road, trucks did not use to visit any other village. Now, trucks are in use, though to a small extent only, in every village. In village I (Asarkhed) the use of trucks has increased as it is nearer a pucca road and the use of trucks is less costly. The cultivators engage these jointly. Despite it, as noted earlier, about 65 per cent of exports from this village are sent to the sub-market yard, Chandore, by carts, similarly, in village 2, Shampli Takli, which is equally near a pucca road, the frequency of trucks is very low—just one truck per two months. This may be attributed to the fact that 1½ miles strip of katcha road is in a bad condition and lacks proper width for the use of trucks. Improvement of roads is expected to increase the traffic by trucks.

Another village in which the frequency of trucks has increased markedly is Khadlejunge which is 10 miles away from the metalled road. This is due to the fact that it grows grapes and tomatoes which are perishable and costly and can, therefore, bear the higher transport costs.

Nevertheless, katcha roads and their narrowness do hinder the use of trucks. For example, in both villages 5 and 6, there is a much greater scope for trucks.

4.11.2. *Views of cart owners*

In order to ascertain the extent of need for the use of trucks in the villages, the selected respondents were asked to indicate their preference for use of trucks, if available, the commodities for which they would like to use the trucks and the freight they would be ready to pay. Appendix V shows the proportion of respondents in different villages and size of holding groups, expressing desire for the use of trucks.

Over all, about 44 per cent of the respondents expressed a desire for the use of trucks. The proportion in different villages does not bear any significant relationship either to their nearness to a metalled road or to their distances from the mandis. If the percentage of such respondents in village II, which is only 2 miles from a metalled road, is 58, which is higher than that in village IV, which is 8 miles from a metalled road, it is also lower than that in village V, much farther off. Similarly, the per cent of such respondents in the farthest village, No. IV, is the lowest and that in the nearest, No. V, is the highest.

There is, however, a distinct relationship with the size of holdings, the per cent going up from 17 to 80 with a rise in the size of holding, except for a slight recession in the 10—25 group.

4.11.3. *The influencing factors*

The main factors which were reported as influencing the use of trucks are cheaper cost of transport, quicker disposal of goods, and the fact that bullocks are thereby spared for agricultural purposes. The %age reporting each of the reasons is given below:

TABLE 4.21

Distribution of respondents by the reasons for liking to use the trucks

No. reporting use of trucks	%age of total respondents	%age mentioning the reasons				
		Cheaper costs	Bullocks required for agrl. purpose	Quick disposal	Better prices	Saves trouble
(1)	(2)	(3)	(4)	(5)	(6)	(7)
47	44	72	63·8	68·0	2·1	1·0

The proportions of respondents expressing a preference for trucks in regard to transport of different commodities are given below :

TABLE 4.22

Percentage of respondents liking to use trucks for various commodities

Total no. liking to use trucks	Percentage reporting for each commodity													
	Onion		Gur		G. Nut		Cotton		Wheat		Jowar		Bajra	
	A	B	A	B	A	B	A	B	A	B	A	B	A	B
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
47	36	100	35	97·1	22	81·8	4	100	28	53·5	3	Nil	6	67

A—Number having marketable surplus.

B—Percentage liking to use truck.

All respondents having marketable surplus of onion and cotton would like to use trucks, almost all for gur and 82 per cent for groundnut. The percentage is much lower in the case of wheat, bajra and jowar because of the smaller size of marketable surplus, the differences in their capacity to bear higher freights and in perishability.

4.11.4. *The propitious months*

The cultivators want to make use of trucks immediately after the harvest period. November to January were mentioned as the main months during which they would like to use trucks for the export of *kharif* commodities like onion, groundnut and gur and January to March for cotton. For the export of wheat, trucks would be used mainly during March and April.

4.11.5. *The freights desired*

Those who want to use the trucks were asked as to what freight rates they would be willing to pay if the trucks became available. These varied widely among the selected villages. In village Asarkhed, which is only two miles from a pucca road, the respondents reported Re. 1 per mile for a truck load of 125—150 mds.; the corresponding rate reported for village Khadlerjunge was Rs. 2. Again, in village Satali, the freight rate reported is 25 nP. per md. for 30 miles, it is 50 nP. to Re. 1 per md. for 12 miles in village Vikharni which is in the interior and is connected only by a katcha road to the mandi.

The freight rate worked in terms of maund mile, as reported in the selected villages varies as follows :

TABLE 4.23

Freight rates that the respondents are willing to pay

Village	Distance in miles from		Freight rate per maund per mile
	Pucca road	Mandi	(nP)
(1)	(2)	(3)	(4)
1	2	16	0·8
2	2	25	N.A.
3	3	18	0·8
4	8	36	3·0
5	10	12	1·6
6	15	15	4·2

The rate is higher in the case of interior villages, farther from a pucca road, though the difference appears to be quite pronounced in the case of villages 4 and 6. Probably, this is due to the fact that the rates they are willing to pay are based on the high rate they may be paying for using carts at present. In the case of village 5, however, since, as noted earlier, the trucks are already being used by the cultivators, the rate mentioned is comparatively low.

4.11.6. *Future prospects*

The bullock carts operating in the Lasalgaon mandi are used for the transport of commodities for short distances, such, as station yard and godowns situated within the mandi. For despatches to stations outside Lasalgaon, only trucks are used and not the local bullock carts. The cultivators prefer bullock carts for transport work from the villages to mandis for all commodities when the distance is short except in the case of onion for which the truck is preferred for bringing the produce in bulk to avoid shrinkage and to obtain a better price in the market. Moreover, a number of sub and new mandis have been started nearer the villages so that the produce of the villages has started going to those markets by bullock carts.

In the near future also, say, the next 10 years, the bullock carts are not expected to lose much ground because the economic factor of cost and short distance for the arrivals in the market is likely to exist.

4.11.7. *Certain notable tendencies*

Certain tendencies which are likely to influence the existing position are also beginning to appear. It is learnt that in the village of Pimpalgaon Baswant in Niphad taluka, 800 acres of area are being brought under co-operative farming. This is likely to make the use of trucks for dispatches from this village economical. A scheme has been sanctioned by the Government of India for a co-operative sugar factory (taken up by the cultivators on co-operative basis) at Niphad for an acreage of 6,000 acres. It will affect the crop pattern in this area and this will lead the cultivators to send their sugarcane directly to the sugar factory in trucks for making sugar.

APPENDIX I

No. of visits of carters according to distance groups

Distance range	No. relevant	Busy season				Slack season			
		Nil	1 & less than 1	2—5	5 & above	Nil	1 & less than 1	2—5	5 & above
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1. Less than 2 miles ..	Nil								
2. 2—5 miles	Nil								
3. 5—10 miles	6	—	5	1	—	3	3	—	—
4. 10—20 miles ..	14	—	13	1	—	7	7	—	—
5. 20 miles and above ..	1	—	1	—	—	—	1	—	—
TOTAL ..	21	—	19	2	—	10	11	—	—

APPENDIX II

Incoming traffic from sub-markets or nearby mandis

(Quantity in mds.)

Villages	Total imports (Qty.)	The distance of the farthest sub-market		Imported from					
				Near sub-market yard/Mandi				Farther place	
				Bullockcart (%)	Truck (%)	Maximum distance		Bullock cart (%)	Truck (%)
		K	P			K	P		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1.	550	2	2	36·3	—	2	18	—	63·7
2.	155	2	1	100·0	—	—	—	—	—
3.	690	5	0	100·0	—	—	—	—	—
4.	1,660	0	12	—	100·0	—	—	—	—
5.	7,000	10	2	—	—	10	2	80·0	20·0
6.	2,000	4	8	50·0	—	15	0	46·0	4·0
TOTAL ..	12,055	—	—	16·2	13·7	—	—	55·2	14·9

APPENDIX III

Percentage distribution of carts according to days of employment for marketing and other purposes

(LAST YEAR)

Type	Purpose	No. of days in groups per month					Avg. no. of days per month	%age to all purposes
		Total no.	0—10 %	10—15 %	15—20 %	20 & above		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
A.	(*a*) Marketing operations	82	91·5	8·5	—	—	4·2	30·1
	(*b*) Other operations ..		59·8	39·0	1·2	—	9·4	69·9
	(*c*) All purposes ..		15·9	40·2	37·8	6·1	13·6	100·0
C1	(*a*) Marketing operations	11	72·7	27·3	—	—	8·9	64·5
	(*b*) Other operations ..		100·0	—	—	—	4·9	35·5
	(*c*) All purposes ..		9·1	63·6	27·3	—	13·8	100·0
C2	(*a*) Marketing operations	15	100·0	—	—	—	5·1	42·4
	(*b*) Other operations ..		73·3	26·7	—	—	6·7	57·6
	(*c*) All purposes ..		46·7	33·3	40·0	—	11·8	100·0
	All Marketing operations	108	90·7	9·3	—	—	4·8	35·8
	Other purposes ...		65·8	33·3	0·9	—	8·6	64·2
	All purposes		16·7	41·7	37·0	4·6	13·4	100·0

APPENDIX IV

Percentage distribution of carts according to days of employment for marketing and other purposes

(LAST MONTH)

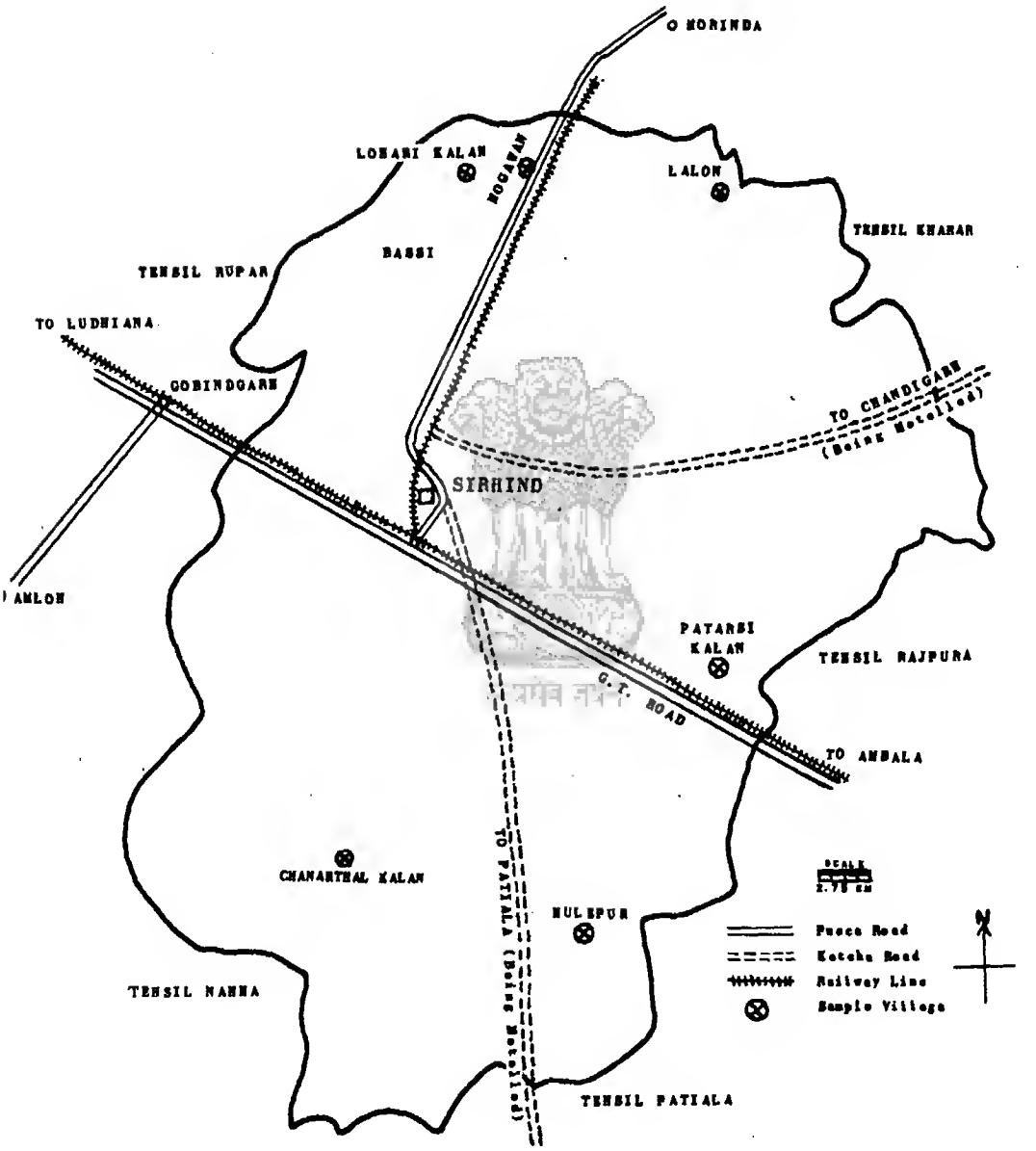
Type	Purpose	No. of days in groups				Avg. no. of days	%age to all purposes
		0—10 %	10—15 %	15—20 %	20 & above		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
A	(*a*) Marketing operations ..	51·2	23·2	15·9	9·7	8·0	36·7
	(*b*) Other operations	14·6	24·4	47·6	13·4	13·5	63·3
	(*c*) All purposes	—	3·6	29·3	67·1	21·5	100·0
C1	(*a*) Marketing operations ..	—	18·2	18·2	63·6	18·2	73·4
	(*b*) Other operations ..	72·7	27·3	—	—	6·6	26·6
	(*c*) All purposes	—	—	—	100·0	24·8	100·0
C2	(*a*) Marketing operations ..	13·3	40·0	40·0	6·7	12·2	55·2
	(*b*) Other operations ..	33·3	46·7	20·0	—	9·9	44·8
	(*c*) All purposes	—	13·3	—	86·7	22·1	100·0
Total:	(*a*) Marketing operations	40·7	25·0	19·4	14·9	9·6	43·8
	(*b*) Other purposes ..	23·1	27·8	38·9	10·2	12·3	56·2
	(*c*) All purposes	—	4·6	22·0	73·0	21·9	100·0

APPENDIX V

Distribution of respondents desiring the use of trucks according to size of holding

Village	Distance from		Total respondents	Percentage liking to use trucks	Size of holding groups (in acres)							
					0-5		5-10		10-25		25 and above	
	Pucca road	Mandi			No. in group	Percentage liking	No. in group	Percentage liking	No. in group	Percentage liking	No. in group	Percentage liking
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
I	2	16	10	40	2	Nil	1	Nil	4	50	3	66
II	2	25	12	58	—	—	2	Nil	8	62	2	107
III	3	18	8	25	—	—	—	—	4	Nil	4	57
IV	8	36	38	21	—	—	3	67	30	7	5	80
V	10	12	29	72	4	25	7	43	13	92	5	100
VI	15	15	9	56		—	—	—	3	Nil	6	83
TOTAL	—	—	106	44	6	17	13	38	62	34	25	80

Sketch map of the hinterland
of
SIRHIND mandi
showing road and rail connections
and location of sample villages.



CHAPTER 5

Case Study of Sirhind Mandi

I. Traffic and transport in the mandi

5.1. Incoming traffic

5.1.1. *Volume and composition*

Figures of incoming traffic (by rail and road) of principal commodities in this mandi during 1949-50 and 1959-60 are given in the following table :

TABLE 5.1

Incoming traffic in principal commodities (in mds.)

Commodities	1949-50		1959-60		Percentage change
	Qty.	% to total	Qty.	% to total	
(1)	(2)	(3)	(4)	(5)	(6)
Food crops					
1. Wheat	36,728	15·9	1,08,600	23·2	195·7
2. Gram	12,835	5·6	29,727	6·4	131·6
3. Paddy	Nil	Nil	1,48,642	31·8	Nil
TOTAL ..	49,563	21·5	2,86,969	61·4	478·9
Cash crops					
1. Gur-Shakkar	16,500	7·2	43,500	9·3	163·6
2. Cotton	57,785	25·0	1,10,478	23·6	122·9
3. Groundnut	21,984	9·5	16,338	3·5	—(24·8)
TOTAL ..	96,269	41·7	1,70,316	36·4	76·9
Other commodities					
Chillies	84,970	36·8	10,500	2·2	—(87·5)
GRAND TOTAL ..	230,802	100·0	4,67,785	100·0	100·3

The most important commodity brought to this mandi is paddy, accounting for 31.8 per cent followed by cotton and wheat with 23.6 and 23.2 per cent respectively. Some significant differences between the nature and composition of incoming traffic of these two years are noticeable. The total quantity has risen from 2.3 lakh to 4.7 lakh maunds. Secondly, while no paddy was received in this market during 1949-50, it constituted about 32 per cent of the total incoming traffic in 1959-60. Leaving about 1.48 lakh maunds of paddy received in 1959-60, but not in 1949-50, the quantity of this traffic comes to 3.19 lakh maunds or a little less than one and a half time that of 1949-50. The incomings of wheat are little less than three times, those of gur-shakkar gram and cotton have more than doubled, while in the case of chillies there has been a precipitous fall from 84 thousand maunds to 10 thousand maunds.

5.1.2. *Seasonal variations*

The following table shows the distribution of incoming road traffic of certain commodities during the four calendar quarters :

TABLE 5.2

Seasonal distribution of the incoming traffic in certain commodities

Seasonal quarters	1949-50		1959-60	
	Total		Total	
	Qty. (mds.)	%age to total arrivals	Qty. (mds.)	%age to total arrivals
(1)	(2)	(3)	(4)	(5)
1. January-March	25,900	24·2	49,500	12·1
2. April-June	31,600	29·5	1,04,500	25·7
3. July-September	6,900	6·4	17,900	4·4
4. October-December	42,700	39·9	2,35,400	57·8
TOTAL	1,07,100	100·0	4,07,300	100·0

There is a marked concentration of traffic in the second and fourth quarters which together account for 84 per cent of the total. This is due to the fact that April to June and October to December are the busy months for the marketing of wheat, paddy and cotton which constitute the bulk of the marketed production. The overall pattern of seasonal fluctuations in traffic has undergone a change since 1949-50 inasmuch as the shares of the first second and third quarters have declined whereas the share of the fourth quarter has gone up. 18 carters were interviewed at the time of the traffic survey. According to them also the bulk of the marketable surplus is taken to the mandi during the fourth quarter, *i.e.*, October-to December. Almost the whole of paddy and cotton is brought to the mandi during this period. The second quarter comes next in importance as carts carry the bulk of wheat during this quarter. This is in piece with the observations based on mandi level enquiries. Gur is carried during January to March.

The frequency with which the carters come to the mandi is another index of the variation in the flow of arrivals. The carters who were interviewed were accordingly asked as to the frequency of their trips to the mandi during the busy and the slack seasons. The data gathered are presented below :

TABLE 5.3

Distribution of carters by frequency of trips per month.
(No. of carters in different trip frequency groups)

Type of carters	No.	No. of carters in different trip groups							
		Busy season				Slack season			
		Nil	1 & less than 1	2-5	5 & above	Nil	1 & less than 1	2-5	5 & above
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1. Private carters ..	17	Nil	1	14	2	3	11	3	—
2. Private-*cum* public carters title ..	1	Nil	—	1	—	1	—	—	—
TOTAL ..	18	Nil	1	15	2	4	11	3	—

There is a marked difference in the frequency of visits during the busy and the slack seasons, the number of carts making 2—5 visits being 15 and 3 respectively in these seasons. Then again, whereas no carter came to the mandi in the slack season more than 5 times, 2 carters did so during the busy season.

5.1.3. *Frequency of monthly trips and distance groups*

Appendix I shows the number of monthly trips made by carters of different distance groups during the busy and the slack seasons.

10 or 55.6 per cent of the carters came from a distance range of 5—10 miles and half of that number from a distance of 10—20 miles. These two are thus the most important distance groups. Both these groups are quite active also as all of them made either 2—5 or more visits during the busy season.

5.1.4. *Types of roads*

An over-whelming proportion of supplies is brought to this mandi on katcha road, the percentage being practically the same in both the years.

5.2. Outgoing traffic

5.2.1. *Volume and composition*

The following table shows the nature and composition of commodities despatched from this mandi :

TABLE 5.4

Volume and composition of the principal outgoing traffic

Commodity	1949-50 Despatches			1959-60 Despatches		
	Qty. (mds.)	% to G. total	% to arrivals	Qty. (mds.)	% to G. total	% to arrivals
(1)	(2)	(3)	(4)	(5)	(6)	(7)
Food crops						
1. Wheat	30,000	19·4	81·7	106,000	28·9	97·6
2. Gram ..	10,000	6·4	77·9	27,500	7·5	92·5
3. Rice	Nil	Nil	Nil	145,500*	39·6	97·9*
TOTAL ..	40,000	25·8	80·7	279,000	76·0	97·2
Cash crops						
1. Cotton (Ginned)	39,000	25·3	67·5	37,000	10·1	33·5
2. Gur-Shakkar	16,000	10·1	97·0	43,000	11·7	98·9
TOTAL ..	55,000	35·4	57·1	80,000	21·8	46·9
Other crops						
1. Chillies ..	60,000	38·8	70·6	8,000	2·2	76·2
2. Groundnut ..	Nil	Nil	Nil	Nil	Nil	Nil
GRAND TOTAL	155,000	100·0	67·2	367,000	100·0	78·5

*Related to paddy equivalent.

The total outgoing traffic comes to about 3.7 lakh maunds as against 1.5 lakh maunds 10 years back. Rice and wheat are the most important commodities accounting for about 68.5 per cent of the total outgoing traffic. Next in importance is gur-shakkar accounting for about 11.7 per cent. Chillies, wheat and cotton were the important commodities accounting for 83.5 per cent of the total outgoing traffic from this mandi 10 years back. Rice did not form part of outgoing traffic at that time. The relative importance of chillies has decreased considerably during the last ten years. Then it used to account for 38.8 per cent of the total outgoing traffic while now its percentage share is only 2.2.

The outgoing traffic constitutes about 78.5 per cent of the incoming traffic ranging from 33.5 to 98.9 per cent in different commodities. The pattern in 1949-50 was not much different except that the proportion of cotton formed 67.5 per cent while it is 33.5 per cent now.

5.2.2. *Seasonal variations*

About 54 per cent of the despatches occur in the second quarter (April to June) and the first (January to March) and fourth (October to December) quarters account for about 19 per cent each. Ten years back also the pattern was the same. The second quarter (April to June) accounted for about 51 per cent of the total despatches.

5.3. Transport organisations

There are two organisations for transport workers—a Merchants' Association and a transport union. The former was established in 1959 and has 19 members on its rolls. It does not own any vehicle but undertakes to transport goods on a commission basis, as its main objective is to act as a commission agent.

The transport union was organised in 1960 with 13 members. The aim of this organisation is to safeguard the interests of truck operators. This association has 30 trucks.

5.4. Modes of transport

5.4.1. *Intra-mandi movement*

Only bullock carts meet the entire requirements of transport needed to take goods from the market yard to the commission agents, or from the market yard to the godowns, mills, rail-head or from the shops of the commission agents to godowns, mills, rail-head.

5.4.2. Incoming traffic

(a) *Role of carts*

The following statement shows the relative importance of trucks and carts in the movement of traffic to this mandi commodity-wise in 1949-50 and 1959-60 :

TABLE 5.5

Incoming road traffic (by commodities) handled by carts

(Quantity in mds.)

Commodity	1949-50				1959-60			
	Carts		Trucks		Carts		Trucks	
	Qty.	%age	Qty.	%age	Qty.	%age	Qty.	%age
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Food crops								
1. Wheat ..	35,300	96·2	1,400	3·8	1,13,900	96·1	4,600	3·9
2. Gram ..	11,600	90·6	1,200	9·4	28,600	96·3	1,100	3·7
3. Paddy ..	Nil	—	Nil	—	1,39,900	94·1	8,800	5·9
TOTAL ..	46,900	94·7	2,600	5·2	2,82,400	95·1	14,500	4·9
Cash crops								
1. Cotton ..	51,800	89·93	5,800	10·1	99,400	90·0	11,000	9·9
TOTAL ..	51,800	89·93	5,800	10·1	99,400	90·0	11,000	9·9
G. TOTAL ..	98,700	92·2	8,400	7·8	3,81,800	93·7	25,500	6·3

Trucks play only on pucca roads and handle about 6 per cent of the total traffic. The proportion handled is much higher in cotton than in food-grains, because the former is a more valuable crop and can bear higher transport costs. Ten years back trucks used to handle about 8 per cent.

(b) *Distance group*

The following table shows the percentage of incoming traffic handled by carts during 1949-50 and 1959-60 according to seasons and distance groups :

TABLE 5.6

Percentage of traffic from different distance groups handled by carts during 1949-50 *&* 1959-60.

Distance groups	1949-50				1959-60			
	Jan.-March	April-June	July-Sept.	Oct.-Dec.	Jan.-March	April-June	July-Sept.	Oct.-Dec.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1. Less than 5 miles ..	100	100	100	100	100	100	100	100
2. 5—10 miles	90	99	99	90	90	99	99	90
3. 10—20 miles	10	10	10	10	10	10	10	10

The proportion of trade handled by carts is significantly higher in the distance groups of less than 10 miles than in the higher group, being 90 per cent to 100 per cent in the former while it is not more than 10 in the latter. There has been no change in the proportion during the last ten years.

This aspect was also studied at the time of the traffic survey. It was found that about 55 per cent of the carters were coming from the distance range of 5—10 miles and about 28 per cent from that of 10—20 miles.

5.4.3. *Outgoing traffic*

All the road-borne despatches now and ten years back are handled by trucks.

Relative importance of road

The following table shows the quantities of different commodities in the outgoing traffic handled by road :

TABLE 5.7

Percentage of the outgoing traffic handled by road

Commodity	1949-50	1959-60
(1)	(2)	(3)
Food crops		
1. Wheat	100·0	100·0
2. Gram	45·5	45·5
3. Paddy	—	21·3
TOTAL	85·4	59·8
Cash crops		
1. Cotton	14·3	59·5
2. Gur-shakkar	16·7	69·6
TOTAL	14·9	65·00
Others		
1. Chillies	100·0	100·0
2. Oil cake	—	—
3. Vegetable oil	—	—
TOTAL	6·2	5·1
G. TOTAL	26·1	41·9

Of the total outgoing traffic, about 42 per cent is sent by road and 58 per cent by rail as against 26 per cent and 74 per cent respectively, 10 years ago. The proportion sent by roads varies greatly between different commodities ranging from about 21 per cent in the case of paddy to 100 per cent in the case of wheat and chillies. Ten years' back, the range extended from 14 per cent in the case of cotton to 100 per cent for wheat and chillies. Wheat and chillies are sent entirely by roads now as ten years ago. In regard to cotton and gur-shakkar there has been a very large shift from the rail to the road, the percentage share of the rail having declined from 86 to 41 in cotton and from 83 to 30 in gur/shakkar. Also the absolute quantity of cotton has fallen from 30,000 mds. to 15,000 mds.

5.5. Economic characteristics of transport workers

5.5.1. *No. and type*

The transport workers have been classified into three types : Type A—Those who are private carriers and carry their own produce only; Type B—those who are public carriers and carry only others' produce on hire and Type C—those who carry their own as well as others' produce.

In the mandi there are no transport operators of types 'A' and 'C'. There are only bullock carters and hackney carters and they belong to type 'B'.

During these ten years, there has been a rise in the number of operators of all types. Now there are 7 trucks while there was none earlier. The number of bullock carters has gone up from 10 to 13 and that of hackney carters from 5 to 7. All the 13 bullock carters and 7 hackney cartèrs were included in the sample but 2 bullock carters could not be interviewed.

Counting of traffic coming to the mandi was done on four successive days on two octroi posts. The total number of carts, which arrived in the mandi on these days, came to 146. 18 of these were selected. All these except 1 were of the A type. Besides, one truck and two tractor trollies which came on these dates were interviewed.

5.5.2. *Occupational distribution*

None of the hauliers in the mandi has any subsidiary occupation. Thus, all of them are wholly dependent on transport business for their livelihood. 16 of the 18 carters coming to the mandi from outside had no subsidiary occupation to follow; principal occupation being cultivation for 15 and trading for the remaining one. The principal occupation of the remaining 2 was cultivation, while one was following agricultural labour and the other carting as subsidiary occupation. As for truckers, one of them was a shareholder in a goods carriers company while two had no subsidiary occupation to follow.

5.5.3. *Occupational standing*

Information was gathered on the length of the period during which the respondents have been in this occupation. This is classified in the table below :.

TABLE 5.8

Classification of principal hauliers by the length of service

Type of operator	Less than 2 years	2—5 years	5—10 years	10 years & above	Total
(1)	(2)	(3)	(4)	(5)	(6)
1. Bullock carter	3	—	6	1	11
2. Hackney carter	—	3	2	2	7

In the case of bullock carters at least 72 per cent had spent more than 2 years in this occupation and 63 per cent had actually spent more than 5 years in it. All the hackney carters had spent more than 2 years in hauling and 57 per cent had spent more than 5 years. So most of the respondents have spent a sufficiently long time in the occupation to have established themselves.

5.5.4. *Types of vehicles used*

(a) *Ownership*

All the sample transport operators in the mandi own their vehicles. Of the 18 carters, who were interviewed while bringing produce to the mandi, 17 were carrying goods on private account and one was using his cart for private purposes as also on hire. All these carts except one were owned. As far as trucks are concerned, two (one trucker and one tractor with trolly) were private operators and were owned. Another tractor with trolly was being used as a public carrier and this was not owned by the operator.

(b) *Make*

All the respondents in the mandi have only the improved types of *viz.*, those with pneumatic types, while in the case of those bringing produce to the mandi all except one were of the old type.

(c) *Period of running*

7 bullock carters (64 per cent) in the mandi have owned their vehicles for more than one year and 3 (27 per cent) have owned them for more than 5 years. The single bullock carter who had spent only one month in this profession had acquired his vehicle as soon as he entered the profession. Similarly, 2 (29 per cent) and 5 (71 per cent) among the hackney carters have owned their vehicles for more than 1 year and more than 5 years respectively. Thus both types of hauliers had generally acquired their vehicles as soon as they entered the profession.

(d) *Capacity of vehicles*

The following table shows the utilisation of the capacity of the carts :

TABLE 5.9

Utilisation of capacity of carts by different categories of carters

Category of carter		Less than capacity		½ to ¾ capacity		3/4th to full capacity		Above full capacity	
		No.	%	No.	%	No.	%	No.	%
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1. Private	17	5	29·4	2	11·8	5	29·4	5	29·4
2. Private-*cum*-public	1	—	—	—	....	1	100·0	—	—
TOTAL ..	18	5	27·8	2	11·1	6	33·3	5	27·8

The cart which is being used both as a private and a public carrier is being used much more fully than the private carts. About 39 per cent of the carts are being used for less than ¾ths of their capacity. The improved type of cart is being used over and above its capacity. This points to the possibility of saving in transport resources, *e.g.*, cart and bullocks by a consolidation of freight lots, either by combination amongst themselves or by reducing the frequency of trips. The sample bullock carters in the mandi are not plying on katcha road; the average carrying capacity of their vehicles on pucca road is 55.4 mds. The hackney carts which ply both on pucca and katcha roads have an average carrying capacity of 29.2 mds. and 24.2 mds. respectively. The averages are definitely lower in the latter case.

5.5.5. *Employment pattern*

(a) *Full-time workers*

The study of mandays of employment is confined to hauling of agricultural commodities only in the last month. A manday was taken to be equivalent to 8 hours work. In the table below the mandays and employment is given :

TABLE 5.10

Mandays worked by principal hauliers during the last month

Type of transport worker	No. of respondents and average mandays in the last month for those spending				
	Less than 20 days	20—25 days	25 days & above	Total Mandays	Average
(1)	(2)	(3)	(4)	(5)	(6)
1. Bullock carter	1	—	10	262	23·8
2. Hackney carter	—	1	6	170	24·3

Only one bullock carter (*viz.* the new entrant) has spent less than 20 days in the month in this occupation; the rest 10 had worked for more than 25 days in the month. On an average, the bullock carters got work for 23.8 days per month and if we exclude the single carter, mentioned above, for 25 mandays.

Among the hackney carters, one respondent has spent between 20—25 mandays in this occupation whereas the rest 6 have spent more than 25 mandays in it. The average for all the 7 is 24.3. Thus if we omit the unusual cases, the average mandays of employment is the same for both the types of carters and they are fairly fully employed.

(b) *Part-time workers*

There are no part time workers.

II. VOLUME OF TRAFFIC AND MODES OF TRANSPORT IN THE VILLAGES

5.6. Incoming traffic

5.6.1. *Volume*

The data relating to some of the important, particularly industrial commodities coming to the selected villages given below shows that there has been quite a marked rise in the volume of incoming traffic to the villages :

TABLE 5.11

Volume of incoming traffic

Commodities	49—50	54—55	59—60	%age change in the volume of imports	
	Qty. (mds.)	Qty. (mds.)	Qty. (mds.)	During the last 5 years	During the last 10 yrs.
(1)	(2)	(3)	(4)	(5)	(6)
1. Cotton seed	2,290	2,335	2,815	26·6	22·9
2. Oil cake	2,220	2,295	2,270	—(1·1)	2·3
3. Chemical fertlizers	N.A.	130	1,065	719·2	N.A.
4. Cement	1,070	1,750	2,450	40·0	129·0
5. Others (K. oil, Salt, Tea, etc.)	1,851	2,205	2,659	20·6	43·7
TOTAL ..	7,431	8,715	11,259	29·2	51·5

N.A.=Not available.

Incoming traffic to the villages mainly consists of cotton seed, oil-cake, chemical fertilisers, cement, kerosene oil, salt etc. 10 years back about 7,431 mds. of various commodities were being brought in. In 1959-60 nearly 11,259 mds. *i.e.* 51.5 per cent more are being imported. The increase during the last five years was of the order of 29.2 per cent. There has been a phenomenal rise in the case of chemical fertilisers. The increase in the case of cement has been of the order of 129.0 per cent in the last 10 years. The import of oil cake has remained almost the same over the last 10 years. There was a rise of about 22.2 per cent in the case of cotton seed as compared with 10 years ago.

5.6.2. *Origin*

Of the total incoming traffic about ¾ths were brought from the selected mandi; and 24 per cent from the near mandis to the villages. Usually the cart-men taking the exports from the villages to the mandis bring the commodities to the villages on their return. In the two roadside villages about 10 per cent of the imports come by trucks and 90 per cent by carts. The following table shows the details about the distances from where the imports were brought and mode of transport used.

TABLE 5.12

Percentage of incoming traffic handled by carts in different distance groups

Commodity	Total qty. mds.	%age of bullock carts (distance groups)			
		2—5	5—10	10—15	Total
(1)	(2)	(3)	(4)	(5)	(6)
1. Cotton seeds	2,815	4·8	0·6	94·4	99·8
2. Oil cake	2,270	8·4	0·8	90·4	99·6
3. Chemical fertilisers ..	1,065	—	68·1	31·9	100·0
4. Cement	2,450	16·3	3·1	80·6	100·0
5. Others	2,659	7·1	3·8	88·1	99·0
TOTAL ..	11,259	8·1	8·3	83·2	99·6

The major portion of incoming traffic, *i.e.*, about 83.2 per cent came from distances over 10 miles. Nearly 8.1 per cent was brought from the nearer mandis (most of it was from Bassi) existing at a distance of 2 to 5 miles. The remaining 8.3 per cent were brought from mandis situated at a distance between 5 to 10 miles.

Almost all incoming traffic was brought by bullock carts. However, trucks have been used even for distances between 2—5 miles. Commodities like cement and fertilizers were also brought by carts. This is due to two reasons. First, bullock carts which take the commodities to the markets are available. Secondly, the consignments are usually of a small size.

5.7. Outgoing traffic

5.7.1. *Volume & composition*

The following table shows the nature and volume of the principal outgoing traffic :

TABLE 5.13

Nature & volume of outgoing traffic

Commodities exported	10 years back (qty.) (Qty. in mds.)	5 years back (qty.) (Qty. in mds.)	1959-60 (qty.) (Qty. in mds.)	%age change over 5 years	%age change over 10 years
(1)	(2)	(3)	(4)	(5)	(6)
1. Wheat	12,200	15,100	18,000	19·2	47·5
2. Maize	3,600	3,300	2,300	—(30·3)	—(36·1)
3. Paddy	N.A.	2,000	5,850	192·5	N.A.
4. Gram & wheat gram ..	9,300	8,300	10,400	25·3	11·8
5. Gur Shakkar & Khandsari	4,500	6,400	11,600	81·2	157·8
6. Cotton	8,500	9,000	5,900	—(34·4)	—(30·6)
7. Onion	15,000	20,000	20,000	Nil	33·3
8. Chillies	100	Nil	Nil	Nil	—(100·0)
TOTAL ..	53,200	64,100	74,050	15·5	39·2

N.A. = Not available

Nearly half of the total outgoing traffic of 74,050 mds. from the selected villages is accounted for by the food crops, *viz.*, wheat, maize, paddy and gram and the remaining half by the cash crops like gur (including shakkar and khandsari), onion and cotton.

Among the food crops, wheat is the principal commodity which combined with gram, formed about 38.3 per cent of the total outgoing traffic. Of the cash crops, onion which claimed about 27 per cent is sent out from only one village. Gur and shakkar come next accounting for about 15.7 per cent.

Paddy showed the maximum increase during the last 5 years. The exports of gur and shakkar showed a significant increase, being 81.2 per cent over the last 5 years and 158 per cent over the last 10 years. Taking the 10 years period the rise in the export of wheat was to the extent of 47.5 per cent. There has been only a moderate-rise in the exports of gram and onion and a definite decline in those of maize and cotton.

5.7.2. *Seasons*

Wheat and gram are mainly exported during April to June, the busy period of exports for paddy and maize is October to December; cotton is exported during November to February and the major portion of gur and shakkar is sent to markets during the months of January to April. Nearly 90 per cent of both kharif and rabi exports take place during the above mentioned busy months. Onion, which is grown in a few villages near Chanarthal and forms nearly 27 per cent of the total exports, is taken to markets during the period of May to September.

5.7.3. *Method of marketing*

Except onions, almost all the marketable surplus from five of the selected villages is taken by growers directly to Sirhind or other mandis. Only in one village, *viz.*, Mulepur about 20 per cent of the produce is collected by the itinerant traders. The whole of the marketable surplus of onion, which is exported from only one of the selected villages, *viz.*, Chanarthal is reported to be collected by the traders from the village. In the two roadside villages, the entire produce is taken to the mandis by the growers themselves.

There does not exist any marketing cooperative in any of the villages. There is a Cooperative Marketing-*cum*-Processing Society at Sirhind through which growers from some villages sell their produce. Since the produce is sent by growers to the mandi individually, it has had hardly any effect on the transportation of goods from the village.

5.7.4. *Distances*

The following table shows the distribution of exports to various markets :

TABLE 5.14

Distribution of outgoing traffic to different markets

Village	Total qty. exported@ (Mds.)	Distances from villages					
		Percentage to					
		Sirhind mandi		Nearer mandi*		Other mandis	
		Distance	%age	Distance	%age	Distance	%age
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
I	4,800	10	15·6	4	55·2	11	29·2
II	2,000	10	75·0	—	—	11	25·0
III	11,650	9·5	3·4	3·5	93·2	15	3·4
IV	14,850	16	2·4	10	97·6	—	—
V	5,000	11	64·0	—	—	12	36·0
VI	14,000	10	100·0	—	—	—	—
TOTAL ..	52,300	—	38·6	—	53·5	—	7·9

Of the total exports 38.6 is brought by growers to the selected mandi and about 54 per cent to the nearer markets. From village II, *i.e.* Patarsi-kalan both Sirhind and Rajpura mandis are situated at a distance of 10 to 11 miles and growers send 75 per cent and 25 per cent of the produce to them respectively. Similarly, from village Mulepur, Sirhind and Patiala are 11 to 12 miles away and 64 and 36 per cent, respectively of the produce is sent to these mandis.

Growers prefer to send a commodity to the market which specialises in it even if it involves a little more distance. The exports shown under col. 8 of the above table (other mandis) mostly consist of gur and shakkar sent to the Kurali mandi which is considered an important market for these commodities. Another factor which influenced export to Kurali is that there is no octroi at Kurali. Most of the paddy and cotton exports is sent to Sirhind

*Nearer than Sirhind from the village.

@These are different from total export given against table 5·13 as these do not include quantity collected by traders d'recly from growers.

which again is the principal market for these commodities. The whole of the exports from the interior village VI, *i.e.*, Chanarthal are sent to Sirhind mandi as that is the nearest mandi covering the area.

5.8. Households possessing carts

5.8.1. *Total*

There were 219 cart owners in the selected villages. The number of carts in the village has been steadily increasing during the last 10 years. There were only 159 carts 10 years ago, showing an increase of 37.7 per cent over the last 10 years. The increase was of the order of 18.4 per cent during the last 5 years. The increase in the number of carts is conspicuous in the case of 3 villages *viz.*, Nagavan, Patarsi Kalan and Lalon, where the number is more than doubled (increased by 114.8 per cent) during the last 10 years. The increase in the first two villages is attributed to the increase in production and in the second and third to the break-up of households in the villages. In the remaining three villages the change has not been significant, the increase being only 21.9 per cent in 10 years. The increase in the number has more or less kept pace with that in exports.

5.8.2. *Occupational distribution*

(a) *Selected Households*

67 cart possessing households were selected on a random basis to study in detail the pattern of use of carts, their characteristics, and their economics of operation in the rural area around the mandi

The percentage of cultivator families in the selected villages is not high. Only 53.6 per cent of the population belong to the cultivating class, 11.8 per cent come from the agricultural labour families. The remaining belong to other occupational groups like rentiers, commerce, non-agricultural production.

The selected carters have cultivation as their principal occupation. 7.5 per cent of the selected households have carting as a subsidiary occupation.

(b) *Size of holdings and types of service*

The following table shows the distribution of the selected households according to the size of holding and type of service :

TABLE 5.15

Percentage distribution of households by type of service and size of holding

Type of service	No. of House holds	Percentage to total	(Size of Foldinc) 10—25 (acres)	25 and above (acres)
1	2	3	4	5
1. A	59	88·1	44·1	55·9
2. C1	5	7·5	40·1	60·0
3. C2	3	4·4	—	100
TOTAL	67	—	41·8	58·2

A = Those using carts for carrying their own droduce only.
C1 = Those carrying their produce as well as of others' on hire.
C2 = Those carrying their own produce as well as that of others' but not on hire.

All the carters have holdings above 10 acres. About 58.2 per cent possess holdings exceeding 25 acres. Even 3/5ths of those who run carts on hire belong to the holding size group of 25 acres and above. Carts are mainly kept for carrying their own produce. Only 7.5 per cent run their carts on hire. Of the 5 carters who use carts on hire 1 belongs to a road-side village.

5.9. Particulars of carts

5.9.1. *Period of possession*

The table below shows the distribution of the carts possessed by the respondents according to the period of possession :

TABLE 5.16

Percentage distribution of carts according to the period of possession

Type of service	Total no. of carts	(Possession period groups) 0—5	5—10	10—20	20 and above
(1)	(2)	(3)	(4)	(5)	(6)
1. A	59	44·8	22·0	24·9	8·3
2. C_1	5	60·0	20·0	—	20·0
3. C_2	3	33·3	66·6	—	—
TOTAL ..	67	44·8	23·9	22·4	8·9

Thus, about 45 per cent of the carts are relatively new, *i.e.*, less than 5 years old; about 24 per cent had been purchased 5 to 10 years back only. About 31 per cent are older than 10 years—9 per cent being very old *i.e.* more than 20 years. It is further observed that 'A' type of carters possess comparatively older carts.

5.9.2. *Expectation of life*

The statement below shows the period for which the respondents expected their carts to last with and without major repairs :

TABLE 5.17

Percentage distribution of carts according to the expectation of life

	Total carts	(Year groups) 0—2 %	2—5 %	5—10 %	10—20 %	20 and above %
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1. Without major repairs	66	30·3	43·9	16·7	9·1	—
2. With major repairs	66	—	27·3	30·3	36·4	6·0

About 91 per cent of the carts are expected to last less than 10 years (of which 43.9 per cent for 2—5 years) without major repairs. Only about 9 per cent are expected to work between 10—20 years without major repairs. But with major repairs the life of carts is expected to increase significantly. About 40 per cent of them would last over a period of 10 years.

5.9.3. *Other particulars*

(a) *Capacity*

The carts are of varying sizes—smaller ones with a capacity of 10 mds. and 15 mds., medium ones with that of 20 and 25 mds., and larger ones with a capacity of 30—35 mds. and above. More than half the carts (*i.e.* 56.7 per cent) were found to be of the medium size, 22.4 per cent of the larger size and the remaining 20.9 per cent of the smaller size. The average capacity per cart comes to 22.79 mds. According to the information gathered in the mandi at the time of traffic survey a cart on an average was found to be containing about 18.2 mds. This comes to 80 per cent of the capacity reported in the villages, *i.e.*, an underutilisation by about 20 per cent. The average capacity of carts operating in the mandi is much higher *i.e.* 55.4 mds.

(b) *Types of wheels*

Except one cart all are of the old type, having wooden wheels with iron rings of 2.5 inches width.

(c) *Speed*

The carts normally move at a speed of 1.5 mile to 2.5 miles per hour on a katcha road and 2 to 3 miles on a pucca road, the maximum speed being 3 miles per hour on a katcha road and 4 miles per hour on pucca road.

5.10. Employment & income

5.10.1. *Period of employment*

The following table shows the number of days the selected respondents used their carts during the previous year and previous month for marketing and other operations :

TABLE 5.18

Period of employment of carts

Type	Number	Last year		Last month	
		No. of carts days per month	No. of days per cart per month	Total no. of cart days	No. of days per cart
(1)	(2)	(3)	(4)	(5)	(6)
1. A	59	753·3	12·8	970	16·4
2. C1	5	74·6	14·9	73	14.6
3. C2	3	51·8	17·3	78	26·0
TOTAL ..	67	879·7	13·1	1,121	16·7

On an average, a cart was used for about 13 days a month during the last year. C1 and C2 types used it more than those of the A type. The average of the former comes to about 15 days and 17 days respectively.

Data for the last month which was also a busy month for marketing operations, bring out that a cart was used for about 17 days only. While the use was more intensive in case of A and C2 type, the pattern of use in C1 type did not show practically any change.

5.10.2. *Kinds of use*

Appendix II shows the distribution of carts according to their intensity of use. As the data for the last year reveal, 50 per cent of the carts are used for less than 15 days a month—30 per cent even less than 10 days. About 42 per cent are used for 15 to 20 days while about 7.5 per cent are used for more than 20 days. But the use for marketing operations is only limited and much of the use of carts is for other purposes. The average for marketing purposes comes to 0.5 day only and for other purposes to 12.6 days in a month. The use for marketing purposes with the C1 type of carters is, however, greater *i.e.* 1.3 days. In the case of two roadside villages, the average number of days of carts employed comes to 14.2 days per month—0.5 day for marketing and 13.7 days for other operations. Thus there is no significant difference between the roadside and other villages.

The corresponding data relating to the preceding month—which was also a busy month is given in appendix III.

During the busy month nearly 57 per cent of the carts are used for over 20 days. But about 1/3rd still put in less than 10 days. Here, again, the average use for marketing purposes is one day or so. For other purposes the average is 15.5 days. The use for marketing is greater in case of C1 and C2 types. Among the roadside villages, the use during the last month was 14.9 days—0.9 day for marketing purposes and 14 days for other purposes. The pattern of use for marketing and other purposes in the roadside villages is almost identical with the overall average for all the six villages.

5.10.3. *Distance covered and hours of use of carts*

From the selected respondents information was gathered about the normal distances covered per day during the busy and the slack seasons. Appendix IV shows the distribution of the carts according to the distance covered per day.

Since the carts are used more for operations, other than marketing, the distance travelled per day is not long. Quite a good proportion, *i.e.*, 42 per cent carts cover only 5—10 miles with an average of about 6½ miles, another 20 per cent run for 10 to 15 miles and 40 per cent more than 15 miles per day during the busy season. During the slack season, however, almost all carts travel less than 5 miles, with an average of 2 miles or so. Only 2 carts. *i.e.*, 6.5 per cent reported covering 5 to 10 miles per day during the slack season. The use by the C1 type is slightly higher.

5.10.4. *Feeding charges*

The feeding of the cattle is the main recurring item of expenditure. On an average this comes to Rs. 139 per month or Rs. 4.6 per day. While 11.9 per cent of the carters mentioned Rs. 2.5 per day, about 59.2 per cent reported Rs. 4 and 28.9 per cent, Rs. 6.3 per day.

Besides feeding charges, expenditure on repairs etc. is the other item which a carter has regularly to incur. But we find that the normal cost on maintenance and repair is quite low.

On an average, a carter had to spend Rs. 33 during the last year *i.e.*, Rs. 2.5 per month. About 37 per cent of the respondents had to incur no expenditure at all during the last year. 18 per cent spent less than Rs. 25 another 18 per cent between Rs. 25 and 50—15 per cent between Rs. 50 and 100 and only 12 per cent spent over Rs. 100.

5.10.5. *Income*

Only 5 of the owners of carts (*i.e.* 7.5 per cent) use their carts for professional purposes. These carters reported that they were charging Rs. 6 to Rs. 9 per cart load on a katcha road for the mandi situated at a distance up to 5 miles or so, Rs. 11 to Rs. 12 for a distance ranging between 5 and 10 miles. In the case of a pucca road, the hire charges vary from Rs. 6 to 8 for a distance up to 5 miles and Rs. 8 to 9 for distance between 5 and 10 miles. Thus on an average, the charge on a katcha road varies from 5 to 6 nP. per maund per mile; on a pucca road from 3 to 5 nP., depending on the length of distance.

Three of the five carters reported to have earned about Rs. 250 during the last year *i.e.*, about Rs. 20 to 22 a month. These do not meet even the feeding expenses for a week. The other two had earned only Rs. 100 each *i.e.*, Rs. 8 or so a month.

5.11. Role of trucks

5.11.1. *Frequency of visits of trucks*

Carts continue to dominate over trucks in this area as the table given below relating to the frequency of visits of trucks to the villages reveals :

TABLE 5.19

Frequency of visits of trucks to the selected villages

Villages	Distance from Mandi		Visit of trucks per month		
	Pucca road	Total	10 years back	5 years back	At present
(1)	(2)	(3)	(4)	(5)	(6)
I	10	10	Nil	Nil	3 (last one year)
II	8	10	Nil	Nil	Nil
III	6	9·5	Nil	Nil	Nil
IV	10	16	Nil	Nil	Nil
V	3	11	Nil	Nil	Nil
VI	1	10	20	40	60

In four of the villages II to V, trucks have not been used at all during the last 10 years. The katcha distances involved, deter the use of trucks. The roads are too bad for the trucks to ply. The villagers, however, expressed the hope specially in the case of villages II and V that there can be a good scope for the use of trucks if katcha roads are either improved or metalled. But the low frequency of visits of trucks to village I which is situated on a pucca road dampens one's optimism for the future of mechanical transport even after the improvement of roads.

In contrast to this in village VI (Chanarthal Kalan), which is situated in the interior and is connected to a mandi mostly by a katcha road, (*i.e.* 9 miles katcha and 1 mile pucca), not only the frequency of trucks is as high as 2 per day, but it has tripled over the period of the last 10 years. This is mainly because onion is produced in large quantities in this village, the cultivators make bulk sales, the traders collect the whole of the produce from the village, the commodity being perishable needs quick transport to the mandi. From this village, other commodities are normally not sent by trucks.

5.11.2. *Views of cart owners*

The respondents were asked if they would like to use trucks for carrying their produce to the market. About 39 per cent of them replied in the affirmative. The following table gives their distribution among the selected villages and by the size of holding groups :

TABLE 5.20

Distribution of respondents, liking to use trucks according to size of holdings

Villages	Distance from Mandi			Total respon-dents	%age liking to use trucks	Distribution according to size of holding groups acres	
	Katcha	Pucca	Total			10-25	25 and above
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
I	—	10	10	7	Nil	—	—
II	2	8	10	2	100·0	50·0	60·0
III	3·5	6	9·5	10	50·0	20·0	80·0
IV	6	10	16	9	22·2	50·0	50·0
V	8	3	11	6	33·3	50·0	50·0
VI	9	1	10	33	45·5	26·7	73·3
TOTAL	—	—	—	67	38·8	30·8	69·2

In village I, none showed any desire for the use of a truck. In village II both the respondents would like to make use of a truck, if available. In other villages, the percentage of respondents, liking to use trucks ranged from 22 to 50. It is thus seen that distance is not the only factor influencing the use of trucks.

Further, it is observed that the majority of those who would like to use trucks (*i.e.* 69 per cent) belong to the higher size of holding group *i.e.* possessing more than 25 acres. The rest possess 10 to 25 acres each.

5.11.3. *Influencing factors*

Some of the reasons which the respondents expressed in support of their desire for trucks are (i) that trucks are cheaper, (ii) bullocks would be available for agriculture and other purposes, (iii) large quantities could be sent to distant markets, (iv) trucks would mean more convenience, quick and better disposal. The following table shows the order of importance of the above reasons :

TABLE 5.21

Distribution of respondents by the reasons for liking to use trucks

No. reporting liking for the use of trucks	%age mentioning the reasons					
	Cheaper costs	Bullocks required for agricultural & other useful purposes	Quick & safe disposal	Larger quantities can be sent to longer distance	Trucks more convenient	No reasons
(1)	(2)	(3)	(4)	(5)	(6)	(7)
26	46·2	30·8	3·8	11·5	3·9	3·8

5.11.4. *Factors favourable to the use of carts*

The use of a bullock cart is widespread mainly because of the following reasons :—

1. It is an asset to the cultivators whose economic and social status is judged by its possession.
2. Carts are useful in many ways *viz.*, carrying of manure etc. to the field, bringing produce, fodder and green fodder to the cattle shed and the house and carrying produce to the market.

APPENDIX I

Distribution of carters of different distance groups by the number of monthly trips

Distance groups	No. relevant	Busy season				Slack season		
		Nil	1 and less than 1	2—5	5 & above	Nil	1 and less than 1	2—5
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1. Less than 2 miles	1	—	—	1	—	—	1	—
2. 2—5 miles	1	—	1	—	—	1	—	—
3. 5—10 miles ..	10	—	—	8	2	1	6	3
4. 10—20 miles	5	—	—	5	—	1	4	—
5. 20 miles and above ..	1	—	—	1	—	1	—	—
TOTAL ..	18	—	1	15	2	4	11	3

APPENDIX II

Percentage distribution of carts according to days of employment for marketing and other purposes

LAST YEAR

Type	Purpose	Total number	No. of days in groups per month					
			0—10	10—15	15—20	20 & above	Average no. of days in a month	% to all purposes
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1 A ..	(a) Marketing	59	100·0	—	—	—	0·4	3·2
	(b) Other purposes	59	32·2	22·0	39·0	6·8	12·3	96·8
	(c) All purposes	59	32·2	22·0	39·0	6·8	12·8	100·0
2 C1 ..	(a) Marketing	5	100·0	—	—	—	1·3	8·8
	(b) Other purposes	5	20·0	40·0	20·0	20·0	13·6	91·2
	(c) All purposes	5	20·0	20·0	40·0	20·0	14·9	100·0
3 C2 ..	(a) Marketing	3	100·0	—	—	—	0·6	3·3
	(b) Other purposes	3	—	—	100·0	—	16·7	96·7
	(c) All purposes	3	—	—	100·0	—	17·3	100·0
TOTAL ..	(a) Marketing	67	100·0	—	—	—	0·5	3·6
	(b) Other purposes	67	29·8	22·4	40·3	7·5	12·6	96·4
	(c) All purposes	67	29·8	20·9	41·8	7·5	13·1	100·0

APPENDIX III

Percentage distribution of carts according to days of employment for marketing and other purposes

LAST MONTH

Type	Purpose	Total number	No. of days in groups					
			0—10 %	10—15 %	15—20 %	20 & above %	Average no. of days	% to all purposes
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1 A ..	(*a*) Marketing	59	100·0	—	—	—	1·0	6·3
	(*b*) Other operation		32·2	6·8	6·8	54·2	15·4	93·7
	(*c*) All operations		32·2	6·8	6·8	54·2	16·4	100·0
2 C_1 ..	(*a*) Marketing	5	100·0	—	—	—	2·0	13·7
	(*b*) Other operation		40·0	—	—	60·0	12·6	86·3
	(*c*) All operations ..		40·0	—	—	60·0	14·6	100·0
3 C_2 ..	(*a*) Marketing	3	100·0	—	—	—	2·7	10·3
	(*b*) Other operation		—	—	—	100·0	23·3	89·7
	(*c*) All operations		—	—	—	100·0	26·0	100·0
TOTAL ..	(*a*) Marketing	67	100·0	—	—	—	1·2	7·4
	(*b*) Other operation		31·3	6·0	6·0	56·7	15·5	93·0
	(*c*) All operations		31·3	6·0	6·0	56·7	16·7	100·0

APPENDIX IV

Distribution of carts according to distance covered per day

(Mileage groups)

Busy season

Type of service	Less than 10		10—15		15—20		20 &above		Total	
	No.	Avg.	No.	Avg.	No.	Avg.	No.	Avg.	No.	Avg.
1	2	3	4	5	6	7	8	9	10	11
1 A	26	6·5	9	10·4	8	15·0	16	21·0	59	12·2
2 C_1	1	5·0	3	10·7	—	—	1	30·0	5	13·4
3 C_2	1	6·0	1	12·0	—	—	1	20·0	3	12·6
TOTAL	28	6·4	13	10·6	8	15·0	18	21·4	67	12·3

(Mileage groups)

Slack season

Type of service	0—5		5—10		10 & above		Total	
	No.	Avg.	No.	Avg.	No.	Avg.	No.	Avg.
1	12	13	14	15	16	17	18	19
1 A ..	57	2·2	2	6·5	—	—	59	2·3
2 C_1 ..	5	2·5	—	—	—	—	5	2·5
3 C_2 ..	3	2·3	—	—	—	—	3	2·3
TOTAL ..	65	2·2	2	6·5	—	—	67	2·3

Avg : Average distance covered per day (in miles).

CHAPTER 6

CASE STUDY OF GORAKHPUR MANDI

I. Traffic and Transport in the Mandi

6.1. Incoming traffic

6.1.1. *Volume and composition*

Figures of incoming traffic of principal commodities during 1950-51 and 1959-60 are given in the following table :

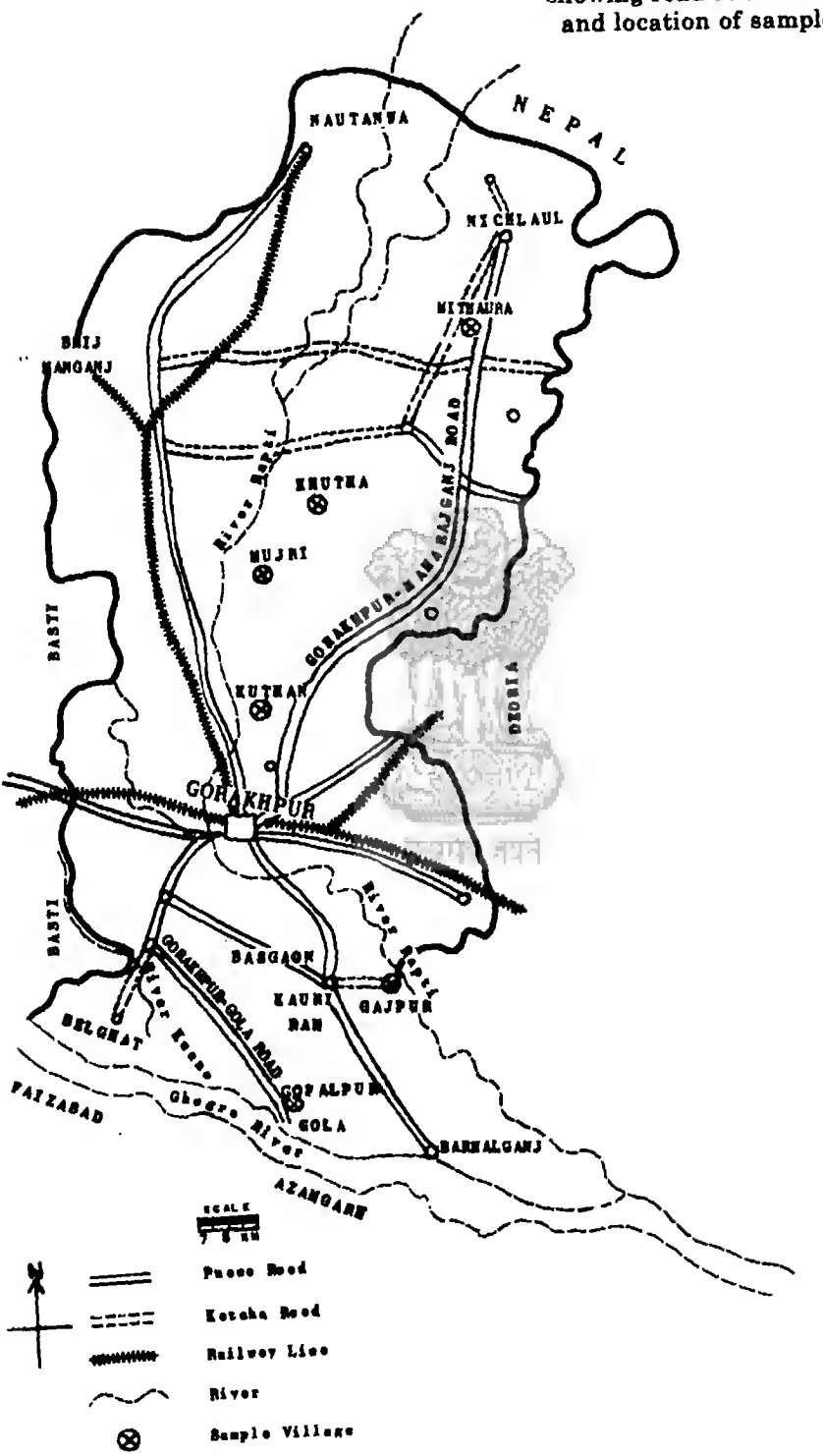
Table 6.1

Incoming traffic by road and rail in principal commodities

Commodity	1950—51		1959—60		% changes during the period (4-2) as % of 2
	Qty. (mds.)	% to grand total	Qty. (mds.)	% to grand total	
(1)	(2)	(3)	(4)	(5)	(6)
Food crops					
1. Rice & Paddy	6,15,000	70·8	4,90,000	56·5	—20·3
2. Arhar	50,000	5·8	65,000	7·5	30·0
3. Wheat & wheat flour ..	40,000	4·6	82,000	9·4	105·0
4. Other coarse grains	41,000	4·7	56,000	6·5	36·6
Total ..	7,46,000	85·9	6,93,000	79·9	—7·1
Cash crops					
5. Linseed	75,000	8·6	90,000	10·4	20·0
6. Mustard	47,000	5·4	84,000	9·7	78·7
Total ..	1,22,000	14·1	1,74,000	20·1	42·6
Grand Total ..	8,68,000	100·0	8,67,000	100·0	—0·1

The volume of traffic at present is practically the same as in 1950-51. This is due to a decline of 20 per cent in the case of rice and paddy which is by far the most important commodity imported. Otherwise there has been a rise in all other cases and a sharp one in some, *e.g.*, wheat and wheat flour and mustard. The fall in the case of paddy and rice is due to the fact that the Government have now placed some more restrictions on the import of rice and paddy from the northern region. Consequently the importance of paddy has decreased from 71 per cent to 57 per cent and cash crops now constitute about 20 per cent of the total incoming traffic as against 14 per cent in the earlier year.

Sketch map of the hinterland
of
GORAKHPUR mandi
showing road and rail connections
and location of sample villages.



6.1.2. *Seasonal variations*

The following table shows the distribution of the road-borne incoming traffic for certain commodities for which figures are available into four calendar quarters :

TABLE 6.2

Seasonal distribution of incoming traffic of certain commodities

Calendar quarters	1950-51		1959-60	
	Qty. (mds,)	%age	Qty. (mds.)	%age
(1)	(2)	(3)	(4)	(5)
1. Jan. to March	1,35,000	25·6	99,000	24·2
2. April to June	1,75,000	33·2	1,55,000	37·9
3. July to Sept.	80,000	15·2	25,000	6·1
4. Oct. to Dec.	1,37,000	26·0	1,30,000	31·8
TOTAL ..	5,27,000	100·0	4,09,000 (77·61)	100·0

There is a marked concentration of traffic in the second and fourth quarters which together account for 70 per cent of the total. This is due to the fact that April to June and October to December are the busy seasons for the marketing of the rabi and kharif crops. The over-all pattern of seasonal fluctuations in this traffic has not undergone much change since 1950-51 except that there have been slight variations in the share of each quarter.

According to the traffic survey, the bulk of the marketable surplus arrives in the mandi during the quarter ending December, followed by the January—March quarter. Very little is sent to the mandi during the quarter, July—September. This is due to the setting in of the monsoon. Paddy and potatoes constitute the main crops during the October—December quarter, potatoes and khuddi during January—March. Paddy and gur could not be fitted into these quarters as their transportation to the mandi covers more than one quarter, *e.g.*, 250 maunds of paddy was sent to the mandi during November, December, January and February, while 180 mds. of gur was sent during the months February to May.

Some idea of the seasonal variation in the flow of arrivals was also obtained by asking the carters and truckers interviewed at the time of the traffic survey, the frequency of trips made by them during the busy and the slack seasons. The following table shows the number of times the 30 carters interviewed at the time of the traffic survey came to the mandi per month during the busy and slack seasons :

TABLE 6.3

Distribution of carters by the frequency of trips per month

Type of carters	No.	Number of carters in different frequency (per month) groups				
		Busy season				Slack season
		Nil	1 or less than 1	2—5	5 & above	Nil
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1. Private carters	20	7	3	10	—	20
2. Public carters	7	—	2	4	1	7
3. Private -*cum*-public carters ..	3	—	—	3	—	3
TOTAL ..	30	7	5	17	1	30

The classification of these carters according to the type of transport work is shown by cols. 1 and 2. About 2/3rd bring their own produce only but there are about 1/3rd who brought others produce as well.

During the busy season, 17 carters paid between 2—5 visits, while 5 paid less than one visit per month. In sharp contrast to this none came at all during the slack season. Thus the incoming traffic to the mandi is highly concentrated during the busy season.

One of the truck operators paid as many as 70 and 3 trips per month during the busy season and the slack season respectively, while the other truck operator undertook only 4 and nil trips during the same period.

6.1.3. *Frequency of monthly trips and distance groups*

The following table shows the number of visits to the mandi during the busy season according to distance groups. The question does not arise for the slack season as no trips were made.

TABLE 6.4

Distribution of carters by frequency of trips per month in different trip groups by distances

Distance range	Number relevant	Busy season			
		Nil	Less than 2	2—5	5 & above
(1)	(2)	(3)	(4)	(5)	(6)
1. Less than 2 miles ..	Nil	—	—	—	—
2. 2—5 miles	2	—	—	2	—
3. 5—10 miles	5	3	—	2	—
4. 10—20 miles	10	2	1	7	—
5. 20 miles and above ..	13	2	4	6	1
TOTAL ..	30	7	5	17	1

13 or 43 per cent of the carters came from a distance range of 20 miles and above. During the busy season, 6 of these carters paid between 2—5 visits and 4 less than 2 visits per month. The next important distance range is 10—20 miles and 10 or 33 per cent of the carters were reported to be coming from this range. During the busy season 7 of them paid between 2—5 visits per month. This is better than that of any other distance group except 2—5 in which both of the two paid 2—5 visits.

6.1.4. *Type of roads*

The entire road borne produce is reported to come on pucca roads only

6.2. Outgoing traffic

6.2.1. *Volume and composition*

The following table shows the nature and composition of the outgoing traffic of this mandi :

TABLE 6.5

Volume and composition of the principal outgoing traffic

Commodities	1959-60					1950-51	
	Outgoings (mds.)	% to total	% to arrivals	% increase over 50-51	Outgoings (mds.)	% to Total	% to arrivals
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Food crops							
1. Rice	82,000	24·4	16·7*	7·9	76,000	27·7	12·4*
2. Arhar	60,000	17·8	92·3	100·0	30,000	11·0	60·0
3. Wheat & Wheat flour	16,000	4·8	19·5	220·0	5,000	1·8	12·5
4. Other food-grains	43,000	12·8	76·8	Nil	43,000	15·7	104·9
TOTAL ..	2,01,000	59·8	29·0	30·5	1,54,000	56·2	20·6
Cash crops							
5. Linseed	70,000	20·8	77·8	—12·5	80,000	29·2	106·7
6. Mustard	65,000	19·4	77·4	62·5	40,000	14·6	85·1
TOTAL ..	1,35,000	40·2	77·6	12·5	1,20,000	43·8	98·4
GRAND TOTAL ..	3,36,000	100·0	38·8	22·6	2,74,000	100·0	31·6

*Related to arrivals of rice and paddy.

The total outgoing traffic comes to about 3.4 lakh maunds as against 2.7 lakh maunds 9 years ago. There has been a rise in all cases except linseed which has witnessed a slight decline. The rise is very marked in Wheat and Wheat flour and Arhar.

Rice, linseed, mustard and arhar are the important commodities despatched accounting for about 82 per cent of the total outgoing traffic. Nine years ago the order of importance was linseed (29 per cent), rice (28 per cent), other foodgrains (16 per cent), mustard (15 per cent) and arhar (11 per cent).

Outgoing traffic constitutes about 39 per cent of the incoming traffic ranging from 17 per cent to 92 per cent in different commodities. The low percentage in the case of rice may be due also to the fact that arrivals relate to rice and paddy. The pattern in 1950-51 was almost identical except in the case of two commodities—'other foodgrains' and 'linseed' in which the outgoing traffic was higher than the incoming traffic indicating a carry over from the previous year.

6.2.2. *Seasonal variations*

About 38 and 33 per cent of the outgoing traffic occur in the first and fourth quarters respectively. Nine years back also the pattern was the same, the percentages being 39 and 33 respectively for the first and fourth quarters. There has been a slight increase in the share of the second quarter and some fall in that of the third quarter.

6.3. Transport organisation

There are 4 associations in this mandi. 3 of them are functioning for protecting the interests of the traders and to create unanimity among them and guide them in matters pertaining to the levy of the tax by the Government. The fourth serves the interests of the mill-owners. These were formed in the years 1920, 1930, 1952 and 1958; these have a membership of 40, 500, 250 and 40 respectively. None of these associations owns or operates any means of transport.

6.4. Modes of transport

6.4.1. *Intra-mandi movement*

Trucks play a very insignificant part in meeting the transport requirements in the mandi. Bullock carts and hand-drawn thelas are used for transporting goods from the rail-head to various traders and also from one trader to another in the market area. These vehicles also transport goods of one retailer and then to some localities in the suburbs which fall within a radius of 4 to 5 miles from the market. Thelas meet the entire needs in the market yard; they handle the entire goods traffic from the market yard to the godowns and mills; the traffic from the market yard to the rail-head is shared by bullock carts and trucks in the ratio of 3 to 1. Thelas play an important part in transporting goods from shops of commission agents to godowns and mills and handle almost all such traffic. For transporting goods to the rail-head from the shops of the commission agents, the commission agents use bullock carts and thelas whose relative importance is 70 per cent and 30 per cent respectively.

6.4.2. *Incoming traffic*

Arrivals by rails account for 49 per cent of the total now as against 35.2 per cent some nine years ago.

(a) *Role of carts.*—The following table shows the relative importance of trucks and carts for bringing some principal commodities to this mandi in 1950-51 and 1959-60 :

TABLE 6.6

Incoming road traffic (by commodities) handled by carts

Commodity	1950-51		1959-60	
	Quantity (mds.)	% to total by road	Quantity (mds.)	% to total by road
(1)	(2)	(3)	(4)	(5)
1. Rice & paddy	3,45,000	94·5	55,000	28·9
2. Arhar	45,000	90·0	51,000	78·5
3. Linseed	70,000	100·0	69,000	86·3
4. Mustard	42,000	100·0	62,000	83·8
TOTAL	5,02,000	95·2	2,37,000	57·9

Of the road-borne traffic, the whole of which comes by pucca roads, carts account for 58 per cent now as compared to 95 per cent nine years back. Thus, trucks have gained over carts during this period considerably, their proportion has risen from 5 per cent to 42 per cent.

The decline in the share of carts has occurred in all the commodities. But it is most marked in the case of food crops.

(b) *Distance groups.*—The following table shows the percentage of incoming traffic during 1950-51 and 1959-60 according to seasons and distance groups :

TABLE 6.7

Percentage of traffic handled by carts during 1950-51 *and* 1959-60

Distance groups	1950-51				1959-60			
	Jan.-March	April-June	July-Sept.	Oct.-Dec.	January-March	April-June	July-Sept.	Oct.-Dec.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1. Less than 5 miles ..	80	80	60	80	75	80	50	75
2. 5—10 „	80	80	60	80	75	80	50	75
3. 10—20 „	80	80	60	80	70	70	60	75
4. 20—50 „	70	70	60	70	5	5	Nil	70
5. 50—100 „	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil

The proportion of trade handled by trucks is much larger when the distances exceed 20 miles, ranging from 95 per cent to 100 per cent as against 20 per cent to 50 per cent in other groups. Nine years ago, the difference in the distance groups was very marked, namely, 30 to 100 per cent in the former and 20 per cent to 40 per cent in the latter. Thus, though there has not been a marked difference in the shorter distances, in the longer distances the cart has been almost replaced by trucks. During both the years, the percentage handled by trucks is higher in the third quarter, *i.e.*, July to September. This may be due to the setting in of the rainy season.

This aspect was also studied at the time of traffic survey. The data collected and analysed are presented below :

TABLE 6.8

Classification of selected carters by distance groups

Type of carter	No.	Less than 2 miles	2—5 miles	5—10 miles	10—20 miles	20 miles & above
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1. Private carters	20	—	1	3	7	9
2. Public carters ..	7	—	—	2	2	3
3. Private-*cum*-public carters ..	3	—	1	—	1	1
TOTAL ..	30	—	2	5	10	13

About 43 per cent of the carters were bringing produce from distances over 20 miles and about 33 per cent from the distance range of 10—20 miles. The remaining one-fourth came from less than 10 miles distances.

6.4.3. *Outgoing traffic*

(a) Relative importance of road

The following table shows the relative percentage of different commodities despatched by road :

TABLE 6.9

Percentage of outgoing traffic handled by road

Commodity	1950-51	1959-60
(1)	(2)	(3)
1. Rice..	100·0	100·0
2. Arhar	Nil	Nil
3. Wheat & wheat flour	100·0	100·0
4. Other foodgrains	53·49	76·7
TOTAL	67·53	65·2
5. Linseed	Nil	14·3
6. Mustard	Nil	Nil
TOTAL	Nil	7·4
GRAND TOTAL	38·0	42·0

Of the total outgoing traffic about 42 per cent is sent by road and 58 per cent by rail. The proportion sent by road varies greatly between different commodities ranging from about 14 per cent in the case of linseed to 100 per cent in the case of rice and wheat and wheat flour. The share of roads has gone up slightly during this period. Cash crops were not exported by road then. But some of them are now sent by road.

(b) Carts *vs.* trucks :

Of the quantities despatched by road, carts carry only 30 per cent now as against 67 per cent in 1950-51. This shows that the trucks are gaining over carts at a very fast rate. All outgoing traffic is on pucca roads as was the case with the incoming traffic.

Goods are generally transported from this mandi by trucks to places over 35 miles as they take only a couple of days whereas a lot of time is taken by carts. The sugar mill owners also prefer to employ trucks since cane can be delivered right up to their mill gates without much driage in transit.

6.5. Economic characteristics of transport workers

6.5.1. *Number and type*

Carters and truckers have been classified into 3 types: Type A—those who are private carriers *i.e.*, carrying their own produce only; Type B—public carriers—carrying others' produce only and Type C—those who carry their own as well as others' produce.

In this mandi all hauliers are of B Type. Out of 126 hauliers, 79 respondents were selected. Out of them 62 are principal hauliers, *viz.*, 25 bullock carters, 19 hand carters and 18 truckers. 17 are subsidiary hauliers, of whom 1 is a bullock carter, 6 are hand carters and 10 truck operators. In the past 10 years the number of hauliers has changed but the exact figures are not available.

57 carters reached the mandi *via* the 3 selected barriers on the first day of counting and 44 on the second day. 5 carters were selected on each barrier each day. Of the 30 carters interviewed 20 were of A Type 7 of B Type and 3 of C Type.

Only two trucks passed *via* these barriers on these days. Hence both were selected for canvassing.

6.5.2. *Occupational distribution*

60 per cent of the bullock carters in the mandi depend exclusively on carting for their livelihood. Among the principal hand carters 62.5 per cent have cultivation as subsidiary occupation. Truck operators have no subsidiary occupation.

Out of 30 carters coming to the mandi, 25 had 'cultivation' as their principal occupation. Out of these 25, 8 had no subsidiary occupation, 9 had 'business' and 8 had carting as their subsidiary occupation. 4 out of the remaining 5 had 'business' as their principal occupation (2 of them were cartmen by their subsidiary occupation) and 1 had 'labour' as his principal occupation (his subsidiary occupation being business).

6.5.3. *Occupational standing*

Information was collected on the length of the period during which the principal hauliers had been in their occupation. This is classified in the table below :

TABLE 6.10

Classification of principal hauliers by the length of service

(Period since engaged)

Type of operator	Less than 2 years	2—5 years	5—10 years	Above 10 years	Total
(1)	(2)	(3)	(4)	(5)	(6)
1. Bullock carters	1	1	3	20	25
2. Hand carters	1	1	3	14	19
3. Truck operators	2	9	2	5	18

A higher percentage (80 per cent) of the bullock carters have been in the occupation for over 10 years than truckers (27.8 per cent). Thus the truckers are relatively new entrants to this occupation in this mandi.

6.5.4. *Type of vehicles used*

(a) Ownership

All the principal hauliers in the mandi own their vehicles (except 18 hand carters who hire their vehicles), as also all the subsidiary hauliers.

18 of the 30 carts selected for traffic survey were owned and 12 were hired. In the case of truck operators, one was using his own vehicle and the other a hired one.

(b) Make

All the mandi cart owners have only old types of vehicles, while among those who brought goods from outside one was an exception.

(c) Period of running

17 out of 25 principal bullock carters in the mandi have owned their vehicles for 20 years and longer. Of the 18 truckers 3 (16.7 per cent) have owned their vehicles for over 10 years, 5 (27.7 per cent) for 3—5 years, and 10 (55.6 per cent) for less than 3 years.

(d) Capacity of vehicles

The following table shows the utilisation of the capacity of the sample carts at the time of the traffic survey :

TABLE 6.11

Utilisation of the capacity of carts by different categories of carters

Category of Operators	No.	Less than ½ capacity		½ to ¾th capacity		¾th to full capacity		Above full capacity	
		No.	%	No.	%	No.	%	No.	%
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1. Private ..	20	2	10·0	5	25·0	11	55·0	2	10·0
2. Public ..	7	—	—	—	—	7	100·0	—	—
3. Private-*cum*-public ..	3	—	—	—	—	2	66·7	1	33·3
G. TOTAL ..	30	2	6·7	5	16·6	20	66·7	3	10·0

Taking all types, about 67 per cent of the carts carried weight between ¾th to full capacity. Public and private-*cum*-public carts are used much more fully than the private ones. None of them was found carrying less than ¾ths of its capacity, while of the private carters only 11 or 55 per cent fall in this category. Of the remaining 9, 2 carried even less than half their capacity, 25 per cent were loaded only up to ¾th of their capacity, while 10 per cent took more weight than their capacity. Less utilisation of capacity by private carters may suggest the possibility of using transport resources more economically by consolidation of market lots or through co-operative marketing.

6.5.5. *Employment pattern*

(a) *Full time workers.*—A manday was taken to be equivalent to eight hours' work. The respondents were asked to state the days worked by them for hauling agricultural commodities on a full-time basis. The data are given below :

TABLE 6.12

Mandays worked during last month

Type of occupation	Type of transport workers	No. of respondents and avg. of mandays in last month for those spending				
		Less than 20 days	20—25 days	25 mandays & above	Total	Average
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1. Principal	Bullock carter	—	21	4	25	22·2
	Hand carter	3	8	8	19	23·2
	Trucker	4	5	9	18	22·0
2. Subsidiary	Bullock carter	--	—	1	1	25·0
	Hand carter	--	2	—	2	23·0
	Trucker	—	Nil	--	—	--

Thus, on the whole, transport workers are fully employed. There is no carter who is employed for less than 20 days and the percentage of such persons in other categories is also negligible.

(b) *Part-time worker.*—Similar data was collected for part-time workers also. No principal haulier in this sample undertakes part-time work.

3 subsidiary hand carters are engaged in part-time work for 18.7 days on an average. 8 truckers have an average of 18.5 days of part-time employment. The average earning of the hand carters and truckers who undertake part-time work is less than that of full-time hauliers who use similar vehicles.

II. VOLUME OF TRAFFIC AND MODES OF TRANSPORT IN THE VILLAGES

6.6. Incoming traffic

6.6.1. *Volume*

The following table shows the changes in the volume of the principal incoming traffic in the six selected villages over the last ten years :

TABLE 6.13

Volume of incoming traffic per year

(Qty. in Mds.)

Commodities	10 years back (Qty.)	5 years back (Qty.)	1959-60 (Qty.)	%age change over last 5 years	%age change over 10 years
(1)	(2)	(3)	(4)	(5)	(6)
1. Wheat, Rice Gram, Bajra etc. (mds.)	525	710	4,487	+532·0	+754·7
2. Oils, Cement, Sugar etc. (mds.)	266·5	357	425	+19·0	+59·5
TOTAL ..	791·5	1,067	4,912	+360·4	+520·6

Foodgrains such as wheat, gram, rice constituted the major portion (*i.e.* 91 per cent) of the incoming traffic to the villages during 1959-60. Oil, cement and sugarcane are among the other important commodities of import. The incoming traffic has gone up manifold over the last 10 years.

The imports of foodgrains during 1959-60 received a fillip because government shops where commodities are sold at controlled rates were opened in 4 out of 6 villages. These shops also catered to the needs of other adjoining villages. Therefore, the imports to these villages are not necessarily wholly indicative of a rise in the requirements of the selected villages. Still, the increase of 7 to 8 times in foodgrains and of 60 per cent in other articles over the last 10 years shows the extent of deficit in the rural areas during this period.

6.6.2. *Origin*

The following table shows the classification of incoming traffic by different types of transport and distance groups :

TABLE 6.14

Incoming traffic by different types of transport and distance groups
(*Distant groups in miles*)

(Quantities in mds.)

Type of transport	Below 2	2—5		5—10		10—15		15 & above		Total	
		Qty.	% to total	Qty.	% to total	Qty.	% to total	Qty.	% to total	Qty.	% to total
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
1. Bullock-cart		300	50·0	242	100·0	110	100·0	188	4·8	840	17·1
2. Truck ..	—	—	—	—	—	—	—	3,772	95·2	3,772	76·8
3. Boats ..	—	300	50·0	—	—	—	—	—	—	300	6·1
TOTAL ..	—	600	100·0	242	100·0	110	100·0	3,960	100·0	4,912	100·0
Percentage		12·3		4·9		2·2		80·6		100·0	

The major portion, *i.e.*, 80.6 per cent came from distances of over 15 miles. About 7 per cent were brought from the other villages situated between 5 to 15 miles and the rest came from still nearer places, *i.e.*, between 2 to 5 miles.

But it is interesting to find that all the commodities that came by road from distances less than 15 miles were brought by carts, whereas 95 per cent of the traffic coming from distances over 15 miles was brought by trucks. In fact the import from farther distances and by trucks was mainly due to the establishment of govt. shops in villages. In the two villages *viz.*, Kuthan and Mujri, where there were no such shops, no imports came through trucks. It is observed that for two villages on the pucca road, the bulk of commodities *i.e.* about 84 per cent of the total imports were brought by trucks from distances exceeding 15 miles.

6.7. Outgoing traffic

6.7.1. *Volume and composition*

The following table shows the nature and volume of the principal outgoing traffic :

TABLE 6.15

Volume and composition of outgoing traffic

(Quantity in mds.)

Sl. No.	Commodity exported	10 years back		5 years back		At present 1959-60		% change over	
		(Qty.)	%	(Qty)	%	(Qty.)	%	5 years back	10 years back
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1.	Sugarcane ..	11,800	18·1	15,700	84·4	20,000	86·0	+27·4	+69·5
2.	Arhar ..	900	6·2	850	4·6	1,000	4·3	+17·6	+11·1
3.	Mustard & Linseed ..	525	3·6	585	3·1	580	2·5	—0·9	+10·5
4.	Potato ..	500	3·4	800	4·3	900	3·9	+12·5	+18·0
5.	Paddy ..	360	2·5	310	1·7	260	1·1	—16·1	—27·8
6.	Gram ..	200	1·4	140	0·8	150	0·6	+7·1	—25·0
7.	Wheat ..	200	1·4	100	0·5	80	0·3	—20·0	—60·0
8.	Other crops ..	60	0·4	120	0·6	290	1·2	+141·7	+383·3
	TOTAL	14,545	100·0	18,605	100·0	23,260	100·0	+25·0	+59·9

Sugarcane is the principal export commodity from the villages. It formed about 86 per cent of the total exports of 23,260 mds. in 1959-60. Arhar, mustard, linseed, potato, paddy, wheat and gram are the other commodities being exported from these villages. Potato, paddy and gram are exported from two villages and wheat from only one village.

The increase in the volume of outgoing traffic was mainly due to the large increase, about 70 per cent, in the exports of sugarcane. The increase in other crops like mustard, arhar and potato was small, *i.e.*, 10.5 per cent to 18 per cent. Exports of food crops like wheat, gram and paddy, on the other hand, had actually gone down during the last nine years. 60 per cent of the exports of sugarcane are attributable to village Mithaura alone.

6.7.2. *Seasons*

Nearly 92 per cent of the total outgoing traffic is accounted for by kharif crops and the remaining 8 per cent by rabi crops. The high percentage under kharif is due to sugarcane which alone accounts for 86 per cent of the total. Except a small portion of food crops, the entire surplus is exported during the months October to June.

Sugarcane is mainly (*i.e.* 80 to 85 per cent) exported during November and December. The exports of food crops like wheat, gram, peas and barley are spread over March to June. Potato is mostly sent to markets during November to February and mustard during April to June. On the whole, about 85 per cent of the kharif crops and 58 per cent of rabi crops are exported during the above mentioned busy months.

6.7.3. *Method of marketing*

Most of the surplus produce (*i.e.* 95 per cent) is taken by the growers themselves for marketing. It is only in Gopalpur village (one of the two near-road villages) that nearly 75 per cent of the marketable surplus is collected by the itinerant traders. It is noteworthy as it is situated on a pucca road and its distance from the mandi is 36 miles. In other villages including the second roadside village, this percentage varies from 1 to 2. In the majority of cases, growers used their own carts for carrying their surplus produce to the markets.

6.7.4. *Distances*

The following table gives the distribution of outgoing traffic according to the distances to which these are sent :

TABLE 6.16

Percentage of outgoing traffic to selected and other markets

Village	Distance to				Percentage of exports to		
	Selected mandi		Nearer mandis /places (max.)		Selected mandi	Nearer places	
	K	P	K	P		Near mandis	Sugar mill or agencies
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	—	44	—	0·5	0·8	2·1	97·1
2	—	36	—	3·0	87·7	12·3	—
3	2·5	9	—	—	13·8	—	86·2
4	6	17	4	—	90·0	10·0	—
5	12	16	—	—	—	7·4*	92·6
6	16	20	6	—	7·2	8·4	84·4
TOTAL :	—	—	—	—	9·8	4·2	86·0

*These sales were made in the village itself.

Of the outgoing traffic (including sugarcane), about 90 per cent was taken by growers to the nearer places—within 6 miles except in the case of village 5, *viz.*, Kutha where it was taken up to 12 miles. The major portion of this traffic (*i.e.* 86 per cent) consists of sugarcane which is either taken on carts to the mills direct (when located near the villages) or the collecting centres situated near the villages and operated by the mill agents. Sugarcane is transported to mills by trucks from these centres. Thus almost all sugarcane is taken by carts from the villages to the nearby places. As regards the remaining exports of 14 per cent, consisting of other commodities, nearly 2/3rds were sent to the selected mandi at Gorakhpur and the remaining to the nearer mandis. The major portion (88 to 90 per cent) is taken to Gorakhpur in the case of two villages, *viz.*, 2 and 4 where sugarcane is not grown. In the former case vegetables only are sent to the nearby market and in the latter case the near market is a weekly one. Secondly, a greater proportion is sent to the near-by markets where more of katcha distance is involved. These nearer markets are more often the feeder markets from where the produce goes further to the main mandi. But, ordinarily, when the distance to mandi is not long, *i.e.*, is less than 20

miles, the growers prefer to send commodities to the selected mandi. Villages situated within a distance of 20 miles of the mandi send their produce to the main mandi and produce from villages over 20 miles, reaches Gorakhpur through the feeding markets.

6.8. Households possessing carts

6.8.1. *Total*

In the six sample villages, in all 124 or 5 per cent of households were found possessing carts, in spite of the fact that nearly 74 per cent of them are cultivating households. This may mean that either the cultivators cannot afford to keep carts or their surplus produce is so small that they do not feel the necessity of keeping them. The percentage varied from 2.1 in Gajpur, which is also the village with the largest number of households, to 10.5 in Khutha. All the 124 households possess one cart each. In the case of two roadside villages the percentages varied between 8.4 and 3.6 respectively.

The following table shows the relationship between the number of carts and the volume of outgoing traffic :

TABLE 6.17

No. of carts and annual volume of outgoing traffic

	For all villages				
	10 yrs.	5 yrs.	At present	%age change during last 5 years	%age change during last 10 years
(1)	(2)	(3)	(4)	(5)	(6)
1. No. of cart	148	127	124	--(2·3)	—(16·3)
2. Total qty. of exports from selected villages (mds.) per year	14,545	18,605	23,260	25·0	59·9
3. Volume of exports per cart per year (mds.)	98·3	146·4	187·6	28·1	90·8

The outgoing traffic from selected villages increased by 25 per cent over the last 5 years and by 60 per cent over last 10 years whereas the number of carts decreased by 2.3 per cent and 16.3 per cent in the corresponding period. Thus on an average the intensity of use per cart increased from 98.3 mds. in 1949-50 to 187.6 in 1959-60. But the decrease in the number of carts was due to an enormous fall in this number in one village *viz.*, Mithaura. The decrease was reported to be due to the restrictions in the movement of goods from the Nepal border and the adjoining markets to Gorakhpur and the increasing use of trucks in recent years. There was an increase both in the volume of exports and the number of carts in the remaining five villages. The intensity of use per cart varied greatly, from 31.2 mds. per year in Gajpur to 364.6 mds. per year in Mujri.

6.8.2. *Selected households*

(a) Occupational distribution

Out of 124 households, 30 per cent, or 39 were selected at random. All of them had cultivation as their principal occupation. The following table shows the distribution of the selected households by their subsidiary occupation :

TABLE 6.18

Distribution of selected households by subsidiary occupation

Distribution according to first subsidiary occupation	No.	% to total
(1)	(2)	(3)
1. Carting	19	48·7
2. Artisans	2	5·1
3. Nil	18	46·2
TOTAL :	39	100·0

48.7 per cent have carting as their first subsidiary occupation. One out of the two artisan households follows carting as additional occupation. Thus over 50 per cent of the households use carting as a supplementary source of income.

A further analysis of the data shows that among villages which are not too far from the mandi the proportion of carters using carting as a subsidiary source of income is higher in those nearer to pucca roads.

(b) Size of holdings and types of service

The following table shows the distribution of sample households according to the size of holding and type of service :

TABLE 6.19

Percentage distribution of households by type of service and size of holding

Type of service	No. of H. Hs.	Size of holdings (acres) (Percentage)			
		0—2	2—5	5—10	10—25
(1)	(2)	(3)	(4)	(5)	(6)
1. A	19	—	47·4	42·1	10·5
2. C	20	5·0	75·0	5·0	15·0
TOTAL :	39	2·6	61·5	23·1	12·8

Type A=Those using carts for carrying their own produce only.

Type C=Those carrying their own produce as well as that of others' on hire.

Nearly half of the households possessing carts use them purely for carrying their own produce, while the other half use them both for carrying their own as well as that of others' on hire. 4 of these 20 belong to roadside villages. None uses it purely as a public carrier.

Nearly 2/3rds (64.1 per cent) have small holdings *i.e.*, less than 5 acres. 23.1 per cent have 5—10 acre holdings and 12.8 per cent have holdings larger than 10 acres. Further, it is found that most of the carters with small holdings use their carts for hiring purposes. 64 per cent of those having less than 5 acres belong to the C type, while in the higher size of holding groups, the carts are used mostly for private purposes. Over 70 per cent of those having more than 5 acres are A type carters.

6.9. Particulars of carts

6.9.1. *Period of possession*

The following table shows the distribution of carts possessed by selected respondents according to the period of possession :

TABLE 6.20

Percentage distribution of carts according to the period of possession

Type of service	Total No. of carts	Possession period groups			
		0—5 years	5—10 years	10—20 years	20 years and above
(1)	(2)	(3)	(4)	(5)	(6)
1. A	19	21·1	42·1	26·3	10·5
2. C	20	45·0	5·0	30·0	20·0
TOTAL :	39	33·3	23·0	28·3	15·4

One-third of the carts were relatively new *i.e.*, less than 5 years' old. A much higher proportion of the C type owners have less than 5-year old carts. On the other hand, the proportion of the 5—10 years old carts is much higher among the A type. Consequently, among the C type owners, 50 per cent carts are less than 10 years' old.

6.9.2. *Expectation of life*

The following table shows the period for which the respondents expect their carts to last with and without major repairs :

TABLE 6.21

Percentage distribution of carts according to the expectation of life

(a) Without major repairs

(Year groups)

Type	No. of carts	0—5	5—10	10—15	15—20	20—25	25—30	30—35
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1. A	19	—	15·8	47·3	21·1	10·5	—	5·3
2. C	20	15·0	30·0	15·0	20·0	10·0	10·0	—
TOTAL :	39	7·7	23·1	30·8	20·5	10·3	5·1	2·5

(b) With major repairs

Type	No. of carts	0—10	10—15	15—20	20—25	25—30	30—35	Above 35 & indefinite
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1. A	19	—	—	—	5·3	—	5·3	89·4
2. C	20	—	—	—	20·0	20·0	20·0	40·0
TOTAL :	39	—	—	—	12·8	10·3	12·8	64·1

The average life of a cart appears to be quite high in this area. Nearly 70 per cent of the carts were expected to last for more than 10 years—31 per cent between 15 to 25 years and nearly 8 per cent even more than 25 years, without carrying major repairs. With major repairs (*i.e.*, a repair costing more than Rs. 50) these might last for much longer periods *i.e.* above 35 years, some even indefinitely. The percentage of households reporting such long life with major repairs is as high as 64.1. All of them, however, reported a period over 20 years.

The life of carts with A type carters was reported to be relatively longer than of those with the C type. Nearly 90 per cent of the A type expected their carts to last for long periods, *i.e.*, 35 years and above, with major repairs. The corresponding percentage for C type is only 40. Probably their carts are of inferior type.

6.9.3. *Other particulars*

(a) *Capacity.*—The capacity of carts in the selected villages varies from 15 to 25 mds. 80 per cent of the carts with the respondents had a capacity of 15 to 20 mds. The average capacity per cart comes approximately to 18.9 mds. According to the information gathered in the mandi at the time of traffic survey, a cart, on an average, was found to be containing about 16.6 mds. This comes to 87.8 per cent of the capacity reported in the villages, or shows an underutilisation by about 12.2 per cent.

(b) *Type of wheels.*—All the carts are of the ordinary type and have wooden wheels fitted with iron rings. The width of these rings ranges between 1¼ in. and 3 in. Nearly half of the carts, however, had rings with 2½ in. width. Improved types of carts with pneumatic tyres do not seem to be in use as these cannot be plied on katcha roads.

(c) *Speed.*—Carts ordinarily move at a speed of 1 to 1½ miles per hour on katcha roads and about 2 to 2½ miles per hour on pucca roads. The maximum speed is said to be 2 miles per hour on katcha and 3 miles per hour on pucca roads.

6.10. Employment and income

6.10.1. *Period of employment*

In order to know the extent and nature of the use of carts the selected respondents were asked about the period for which they used their carts during the previous year and the previous month for marketing and other operations.

The following table gives the average period of employment of carts according to different purposes:

TABLE 6.22

Distribution of carts according to period of employment

Type	No.	Last year		Last month	
		No. of cart days per month	Average days per cart per month	Total no. of cart days	Average days per cart
(1)	(2)	(3)	(4)	(5)	(6)
1. A	19	59·0	3·1	27	1·5
2. C	20	39·9	2·0	49	2·5
TOTAL :	39	98·9	2·5	76	1·9

The data show that the utilisation of carts is very low. A cart, on an average, was used only for 2.5 days a month over the last year. Carters of the A type use carts more intensively than those of the C type.

The average use of a cart during the preceding month of the enquiry was found to be nearly 2 days only. The C type carters (who carry others produce also) plied the carts for 2.5 days on an average, while the A type carters used them for 1.5 days only.

6.10.2. *Kinds of use*

Appendix I shows the extent of use of carts by both A and C types for marketing and other purposes :

The maximum use of carts had been limited to 5 days in a month. Nearly 72 per cent had been used only for 2 to 5 days a month during the previous year. The use as noted above was less in the case of C type where 45 per cent had used for 2 to 5 days and another 45 per cent for less than 2 days a month. The carts are used more for agriculture and miscellaneous purposes than for marketing operations. The proportion of use in terms of cart days was 10 per cent to 40 per cent respectively over the last year. The position is comparable for both types of carters. One-third of the total carts had not been used for marketing at all. In the case of two roadside villages, the average number of days carts were employed comes to about 3 days per month—about one day per month for marketing purposes and about 2 days for other purposes. Thus there is not any significant difference in the use pattern in these villages.

Appendix II gives an analysis of the use of carts during the preceding month.

It is interesting to note that nearly half of the carts were not used at all during the last month. Of the A type carters, about 68.4 per cent had not used their carts. About 38.4 per cent had been used for less than 5 days, 33 per cent being in 2 to 5 days group. It is only 4 carts *i.e.*, 10.3 per cent which were used for 5 to 10 days in the month. The intensity of use was more in case of C type, where 15 per cent had used for 5 to 10 days and 40 per cent for 2 to 5 days.

Further A type carters used the carts mostly, *i.e.* 80 per cent of time for marketing purposes, C type carters used these hardly for 32 per cent of the days of total use. The use of carts for marketing purposes alone is found to be limited to only about 1 day a month. Among the roadside villages the use during the last month was only 1.8 days — 1.0 days for marketing purposes and about 0.8 days for agriculture and miscellaneous purposes. C type carts were not used for marketing purposes at all during the last month.

6.10.3. *Distance covered and hours of use*

Appendix III shows the distribution of carts according to distance covered per day, both during the busy and slack seasons.

There is a wide variation between the distance covered by the carts during the busy and slack seasons. During the busy season, on an average, a cart travels 11.4 miles a day but only 1.3 miles during the slack season. Thus many of the carts lie idle during the slack period. About 80 per cent carts reported 'no work' during this period. The distance covered by the C type of carts appears to be relatively more than that of the A type. Nearly half of the former travel between 10 and 15 miles per day while only about one-third fall in this category among the A type. 20 per cent of the carters of the C type covered even 20 miles per day during the busy season.

Similarly, a cart is used for nearly 8 hours a day for marketing and about 6 hours for other purposes during the busy season. The average number of hours for marketing for those who ply on hire also is a little higher, *i.e.*, about 9 hours a day. The corresponding averages for marketing and other purposes during the slack season are 1.2 and 0.2 hours respectively.

6.10.4. *Feeding charges*

The feeding of cattle is the main item of expenditure that a cultivator has to incur in maintaining a bullock cart. The average expenditure was reported to be about Rs. 39 per month or Rs. 1.3 per day. In three villages these charges were reported to be 50 nP. to Re. 1 per day. In other villages the charges ranged from Rs. 1 to 2 and in a few cases Rs. 3 to 4 even.

6.10.5. *Income*

20 out of 39 sample carters or a little over 50 per cent as mentioned earlier, use their carts for occupational purposes as a secondary means of earning. The carters, on an average, reported that they were charging 19 to 25 nP. per maund for a distance up to 5 miles, from 37 to 50 nP. for a distance up to 10 miles and 42 to 63 nP. for distance up to 20 miles depending on type of roads etc. The difference in charges between katcha and pucca roads was reported to be 6 nP. a maund for distances up to 5 miles and 12 nP. for distances beyond 10 miles.

The earnings of these cultivator owners are quite low which, on an average, was reported to be only Rs. 60 in a year or Rs. 5 a month. 20 per cent of these, however, earned more than Rs. 100, the average being Rs. 150 a year. 25 per cent earned between Rs. 50 and Rs. 100 a year and more than 30 per cent earned less than Rs. 50 and the remaining 20 per cent even less than Rs. 25 (two carters having not earned at all) *i.e.*, about Rs. 1.5 to Rs. 2 a month. Earnings in one village Khutha appear to be good where the average earning was as high as Rs. 121.0.

The earnings were a little better during the previous month which was a busy one from the marketing point of view. 35 per cent did not use the carts at all. Among the remaining, 30 per cent earned about Rs. 30 to 40; 55 per cent got Rs. 10 to 20 during the month and 15 per cent (2 carters) earned Rs. 8 only.

6.11. Role of trucks

6.11.1. *Frequency of visits of trucks*

The bullock carts still remain the primary means of transport in the villages and though trucks have also come in the picture in the recent years, they have not been able to penetrate into the rural areas. The following table shows the frequency of visits of trucks to the sample villages :

TABLE 6.23

Frequency of visits of trucks to selected villages

Villages	Distance from mandi		Average no. of truck visits per month		
	Pucca	Total	10 years back	5 years back	At present
(1)	(2)	(3)	(4)	(5)	(6)
1. Mithaura	44	44	Never	7	15
2. Gopalpur	36	36	Never	Never	3
3. Kuthan	9	11·5	Never	Never	10
4. Gajpur	17	23	1	1	1
5. Khutha	16	28	Never	2	2
6. Mujri	20	36	Never	Never	Never

As is clear from the above table, trucks visit the villages situated on a pucca road or near it more frequently.

Until 10 years back, except for one village, trucks never visited any selected village. Even 5 years back the trucks were not reaching even villages like Gopalpur and Kuthan situated on or near pucca roads. Trucks have made a rapid headway during the last 5 years. There has been a rapid change during this period. Not only the frequency of trucks to villages (Nos. 1 and 3) near pucca road has increased considerably, but trucks are now visiting other villages as well.

6.11.2. *Views of cart owners*

The respondents, when enquired about their desire to use trucks, showed no inclination for them. Only one household expressed a desire to the use of trucks. This is quite understandable in the light of the factors explained in the earlier sections and recapitulated in the next section.

6.11.3. *Factors specially favourable for the use of bullock carts*

The following factors favour the use of carts.

1. Narrow and katcha roads which are not suited for trucks.
2. Consignments are of small sizes.
3. The bullock carts are utilised not only for transportation of goods but for farm operations as well. In Gorakhpur villages, carts are very much used for transport of manure to fields.
4. The carts provide a subsidiary source of income to cultivators of small holdings who carry their own produce and also those of others on hire.

APPENDIX I

Percentage distribution of carts according to days of employment for marketing and other purposes.

LAST YEAR

Type	Purpose	No. of days in groups per month				Average use in days per month
		Total number	Nil	0—2	2—5	
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1. A.	(*a*) Marketing ..	19	26·3	47·4	26·3	1·3
	(*b*) Other	19	—	63·2	36·8	1·8
	(*c*) All	19	—	—	100·0	3·1
2. C	(*a*) Marketing ..	20	40·0	40·0	20·0	0·9
	(*b*) Other	20	15·0	75·0	10·0	1·1
	(*c*) All	20	10·0	45·0	45·0	2·0
TOTAL	(*a*) Marketing ..	39	33·3	43·6	23·1	1·0
	(*b*) Other	39	7·7	69·2	23·1	1·5
	(*c*) All	39	*5·1	23·1	71·8	2·5

*One cart had been purchased only one month back and one cart remained idle during the year.

APPENDIX II

Percentage distribution of carts according to days of employment for marketing and other purposes.

LAST MONTH

Type	Purpose	No of days in groups					Average use in days per month
		Total number	Nil	0—2	2—5	5—10	
(1)	(2)	(3).	(4)	(5)	(6)	(7)	(8)
1. A	(*a*) Marketing	19	73·7	—	21·0	5·3	1·2
	(*b*) Other	19	89·5	5·3	5·2	—	0·3
	(*c*) All	19	68·4	—	26·3	5·3	1·5
2. C	(*a*) Marketing	20	50·0	25·0	20·0	5·0	0·8
	(*b*) Other ..	20	60·0	5·0	35·0	—	1·7
	(*c*) All	20	35·0	10·0	40·0	15·0	2·5
TOTAL	(*a*) Marketing	39	61·6	12·8	20·5	5·1	0·9
	(*b*) Other	39	74·4	5·1	20·5	—	1·0
	(*c*) All	39	51.3	5·1	33·3	10·3	1·9

APPENDIX III

Distribution of carts according to distance covered per day

(Distance in mile groups)

Type of service	Busy season									
	Less than 10		10—15		15—20		20 and above		Total	
	No.	Avg.	No.	Avg.	No.	Avg.	No.	Avg.	No.	Avg.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
1. A	9	7·0	6	11·3	3	15·3	1	20·0	19	10·4
2. C	4	4·5	9	12·0	3	15·0	4	20·0	20	12·6
TOTAL	13	6·2	15	11·7	6	15·1	5	20·0	39	11·4

(Distance in mile groups)

Type of service	Slack season							
	0—5		5—10		10 and above		Total	
	No.	Avg.	No.	Avg.	No.	Avg.	No.	Avg.
1. A	19	1·3	—	—	—	—	19	1.3
2. C	20	1·3	—	—	—	—	20	1·3
TOTAL :	39	1·3	—	—	—	—	39	1.3

AVT.—Average number of miles per cart.

CHAPTER 7
CASE STUDY OF SAINTHIA MANDI

I. TRAFFIC AND TRANSPORT IN THE MANDI

7.1. Incoming traffic

7.1.1. *Volume and composition*

Figures of arrivals of principal commodities by road and rail during the years 1950 and 1960 are given in the following table :

TABLE 7.1
Incoming traffic in principal commodities

Commodity	1950		1960		% change during the period
	Quantity (Mds.)	% to total	Quantity (Mds.)	% to total	
(1)	(2)	(3)	(4)	(5)	(6)
1. Paddy	3,68,291	63·5	10,49,963	77·6	185·1
2. Potato	90,000	15·5	1,10,000	8·1	22·2
3. Jaggery	16,500	2·8	30,000	2·2	81·8
4. Molasses	5,000	0·9	14,852	1·1	197·0
5. Oil Cake	1,00,000	17·3	1,49,191	11·0	49·2
TOTAL	5,79,791	100·0	13,54,006	100·0	133·6

The total incoming traffic of principal commodities has more than doubled during the last 10 years. The arrivals of every commodity have gone up during this period. In 1950, paddy was a controlled commodity and the figures represent procurement by the government. Taking the procurement by government as the total arrivals of paddy in the mandi that year, the total arrivals of paddy in 1960 were nearly 3 times to those in 1950. It is the rise in the case of paddy which makes all the difference between the two years as paddy constitutes about 78 per cent of the incoming traffic.

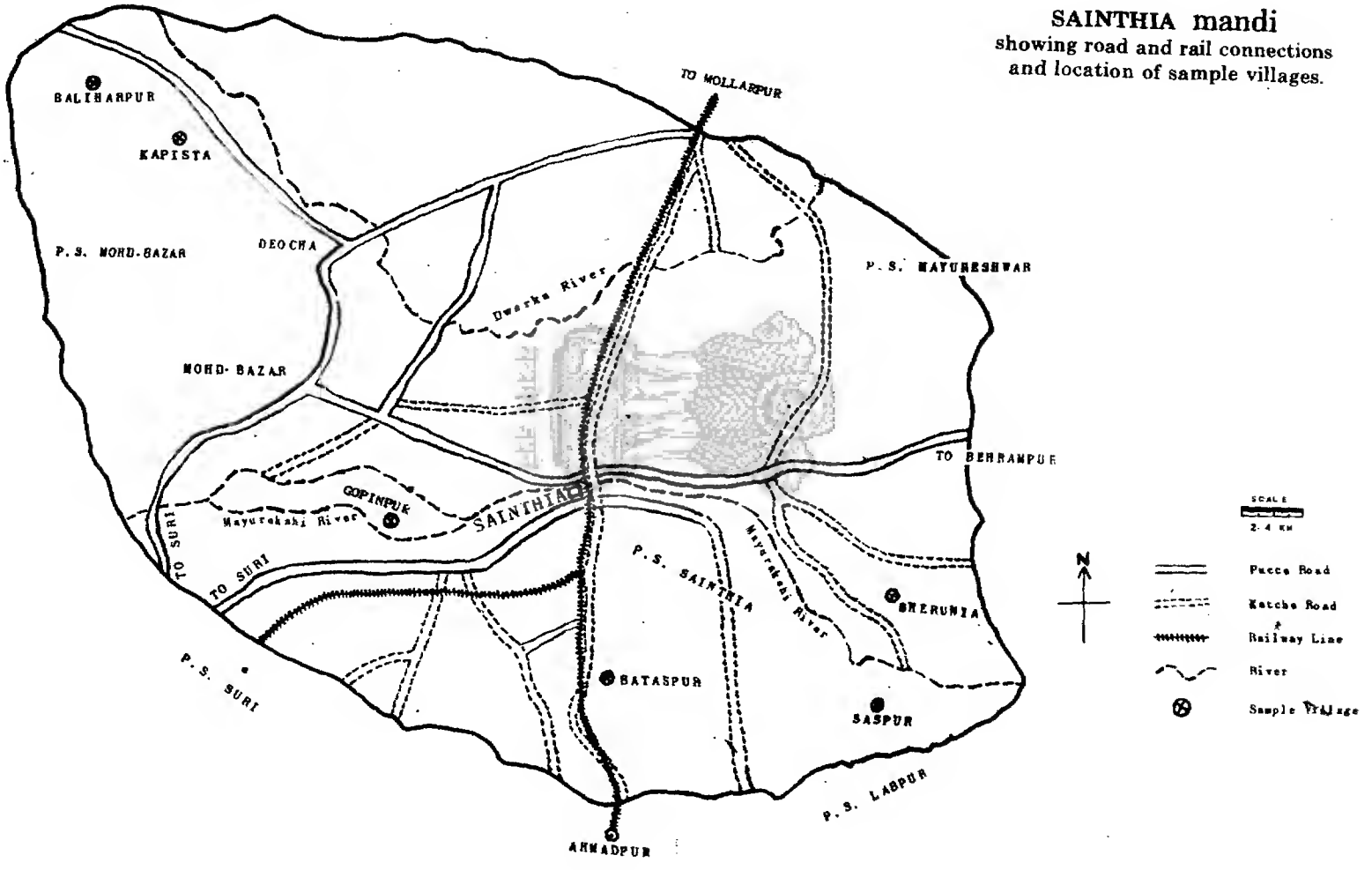
7.1.2. *Seasonal variations*

Table 7.2 shows the distribution of arrivals of paddy, which constitute about 78 per cent of the total arrivals, during the year 1960, among the four quarters.

TABLE 7.2
Seasonal distribution of incoming traffic in paddy during 1960

Quarters	Quantity (Mds.)	% to total arrivals
(1)	(2)	(3)
1. January—March	3,35,554	32·0
2. April—June	2,33,654	22·2
3. July—September	1,37,880	13·1
4. October—December	3,42,875	32·7
TOTAL	10,49,963	100·0

Sketch map of the hinterland
of
SAINTHIA mandi
showing road and rail connections
and location of sample villages.



First and last quarters account for nearly 2/3rds of the total incoming traffic. The trade in the market is thus brisk continuously for six months from October to March. Thereafter the tempo begins to decline and business is at its lowest ebb during the monsoons. This is easy to explain. The principal commodity being paddy, business gains momentum after its harvesting season. The monsoon period dip, however, used to be more pronounced earlier.

In the course of the last ten years, two important pucca roads have been constructed and one important pucca road improved. These roads connect the Sainthia market to a number of villages in the hinterland as well as with important markets. The construction and improvement of these roads have had a great influence on the pattern of the monthly flow of business to the Sainthia market. Prior to the construction and improvement of these roads the existing katcha roads used to be practically non-negotiable during the monsoon season; and so the people used to complete their marketing operations, both disposal of goods and purchase of consumption requirements, before the onset of the monsoons. During the monsoon months, therefore, trading operations used to go down to the minimum. But with the recent improvements in the condition of roads, trading operations now generally extend over the whole of the year, except with villages which are still connected only by katcha roads.

Some idea of the seasonal variation in the flow of arrivals was also obtained by asking the carters and truckers at the time of the traffic survey, the frequency of trips made by them during the busy and the slack seasons.

The data collected are set forth in the following table :

TABLE 7.3

Distribution of carters by frequency of trips per month

Type of operator	No.	No. of carters in different trip frequency (per month) groups							
		Busy season				Slack season			
		Nil	1 & less than 1	2-5 times	5 times & above	Nil	1 & less than 1	2-5 times	5 times & above
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1. Private carters	50	Nil	4	35	11	5	37	8	Nil
2. Public carters	1	Nil	Nil	1	Nil	Nil	1	Nil	Nil
3. Private-*cum*-public carters	1	Nil	Nil	Nil	1	Nil	1	Nil	Nil
TOTAL ..	52	Nil	4	36	12	5	39	8	Nil

Almost all carters bring their own produce only. There is considerable difference in the frequency between busy and slack seasons. While during the busy season 12 or 23 per cent came to the mandi 5 times or more and 36 or 69 per cent 2—5 times; during the slack season none came to the mandi 5 times or more and only 8 or 15 per cent came 2—5 times. But during the slack season too, 39 or about 75 per cent came once or less in a month.

The trips of truckers are more frequent. The private carrier, which belongs to a rice mill located in the mandi itself and which goes out to villages and collection centres, made as many as 30 and 15 trips per month in the busy and slack seasons respectivcly. The public carrier paid, on an average, 6 and 4 visits per month during the busy season and the slack season respectively. This truck plies on the Calcutta-Sainthia route and is run on a contract basis. It brings dalda, soaps and matches to the mandi from its principals in Calcutta. The third truck, belonging to the private-*cum*-public category, paid 1 visit per month during the busy season and none in the slack season.

7.1.3. *Frequency of monthly trips and distance groups*

Appendix I shows the number of trips to mandi made by carters during the busy and the slack seasons.

The first thing to notice is the distance from which carters came to this mandi. Only 1 came from beyond 20 miles. The bulk or 54 per cent came from a distance of 5—10 miles. Half of these came from a distance of 2—5 miles and one quarter from a distance of 10—20 miles. Thus, the relative importance of the distance groups of 5—10, 2—5 and 10—20 mile groups is as 4 : 2 : 1.

Next is the point of the frequency of trips. Taking 5 visits or more for the busy season and 2—5 visits per month during the slack season as high frequency, the percentage is the highest during the busy season in 2—5 mile group, followed by 10—20 and 5—10 mile groups. In the slack seasons, only 5—10 and 2—5 miles groups fulfil this criterion and the percentage is higher for the latter. Thus, frequency is not directly related to distance as it does not always decline in the upper distance groups. More important are perhaps the type of road and transport facility available.

7.1.4. *Types of roads*

About 2/3rds of the incoming road-borne traffic is on pucca roads. The position was almost the same ten years back also. The volume of trade on both katcha and pucca roads has more than doubled during this period.

7.2. Outgoing traffic

7.2.1. *Volume and composition*

The following table shows the nature and composition of principal commodities constituting the outgoing traffic from this mandi :

TABLE 7.4

Volume and composition of the principal outgoing traffic

Commodities	1950			1960		
	Outgoings (Mds.)	% to total	% to arrivals	Outgoings (Mds.)	% to total	% to arrivals
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1. Rice	*3,54,780	62·5	96·3	*8,37,261	74·0	79·70
2. Oil Cake ..	1,00,000	17·6	100·0	1,49,191	13·2	100·0
3. Molasses ..	8,000	1·4	160·0	14,852	1·3	100·0
4. Potato ..	85,000	15·0	94·4	1,00,000	8·8	90·1
5. Jaggery ..	20,000	3·5	121·2	30,000	2·7	100·0
TOTAL ..	5,67,780	100·0	97·9	11,31,304	100·0	83·1

* In terms of paddy equivalent.

The total outgoings in 1960 amounted to about 11.3 lakh maunds as against 5.7 lakh maunds in 1950. By far the most important commodity despatched is rice accounting for about 74 per cent of the total despatches. Next in importance is oil cake. Its quantity comes to about 13 per cent of the total. Other commodities despatched are potato, jaggery and molasses. Rice was the most important commodity among those despatched from this mandi ten years back also and accounted for about 63 per cent of the total. Next in importance was oil cake with 18 per cent followed by potato with about 15 per cent. Despatches constitute about 83 per cent of arrivals ranging from 80 per cent to 100 per cent in different commodities. The proportion of despatches to arrivals in 1950 was much higher at 98 per cent—3 out of 5 commodities arrive here only to be sent out. About one-fifth of paddy receipts is consumed locally.

7.3. Transport organisation

There is only one merchants' association here which was established in 1940 and has 90 members on its roll. The main objective of this association is to negotiate with the government, the fixation of prices of controlled commodities. It is not active now as the price control scheme has been withdrawn.

7.4. Modes of transport

7.4.1. *Intra-mandi movements*

For intra-mandi transport, trucks are not generally considered suitable as the distances involved are short and the trips frequent. Only some rice mills located at Sainthia are using their own trucks, not only for bringing paddy from the villages, but also for despatching rice from the mills to the rail head. In regard to the commodities handled in the market, mechanised transport is not considered suitable and goods are still carried by carts.

7.4.2. *Incoming traffic*

Arrivals by rail acount for 23.7 per cent of the total now as compared to 18.1 per cent ten years back.

(a) Role of Carts

The following table shows the relative importance of carts and trucks in the movement of traffic to this mandi by road commodity-wise in the years 1950 and 1960.

Table 7.5

Incoming road traffic (by commodities) carried by carts & trucks

Commodity	1950		1960	
	Quantity (Mds.)	% to total by carts and trucks	Quantity (Mds.)	% to total by carts and trucks
(1)	(2)	(3)	(4)	(5)
1. Potato	90,000	100·0	1,10,000	100·0
2. Jaggery	16,500	100·0	16,663	100·0
3. Paddy	3,59,084	97·5	6,79,181	75·7
Total	4,65,584	98·1	8,05,844	78·8

Of the total traffic by roads, trucks account for 21 per cent and carts for 79 per cent. Trucks ply only on pucca roads. The trucks have gained over carts during this period tremendously—their share has risen from about 2 per cent to 21 per cent. Though the overall share of carts has decreased, the absolute quantity handled by them is a little less than double of that in 1950. Part of the increase in the truck borne trade may be, thus, unavoidably due to the fact that the number of carts failed to keep pace with the increase in trade.

Secondly, the decline in the share of carts has occurred in the case of paddy only. Paddy being dearer than potato and jaggery can bear the cost of a little more expensive transport as compared with these commodities. Secondly, the use of trucks by mills for collecting paddy from the villages has been increasing. Potato and jaggery continue to be handled by carts in entirety as it used to be ten years ago.

(b) Distance Groups

In the distance group less than 5 miles from the market, the entire traffic is still brought by carts as before. The share of trucks is 5 per cent and 60 per cent in the distance groups of 5—10 and 10—25 miles respectively. All the goods from distances over 25 miles are brought either by trucks or by rail. Thus the use of trucks increases progressively with distance.

According to the traffic survey, 28 or 54 per cent of the 52 carts came from a distance of 5—10 miles and 14 or 27 per cent from that of 2—5 miles. Thus these two are the most important distance groups accounting for 81 per cent of the incoming carts. The lower share of carts *vis-a-vis* trucks in the distance group of 10—25 miles mentioned above is due to the fact that trucks also handle traffic from this distance group.

7.4.3. *Outgoing traffic*

(a) Relative Importance of Road

The following table shows the quantities of different commodities despatched by road :

Table 7.6

Percentage of outgoing traffic handled by road

Commodity	1950	1960
(1)	(2)	(3)
1. Rice	Nil	3·0
2. Oil Cake	100·0	100·0
3. Molasses	100·0	100·0
4. Potato	23·5	30·0
5. Jaggery	Nil	Nil
Total	28·5	24·9

Of the total despatches, about 25 per cent are sent by road and 75 per cent by rail. While all the oil cakes and molasses are despatched by road, the percentage of quantity despatched by road is only 3 and 30 for rice and potato respectively; all jaggery takes to rail. In 1950 the pattern was almost identical, the road accounting for 28.5 per cent and the railways for 71.5

per cent. The proportion carried on road varied between 23.5 per cent in the case of potato and 100 per cent in the case of molasses and oil cakes. Rice used to be sent by rail only.

(b) CARTS VS. TRUCKS

All the despatches by road were by carts ten years ago, while their share is only 54 per cent now. Trucks now carry as much as 46 per cent as against a negligible proportion some ten years ago.

For inter-mandi transport the truck has completely replaced the carts because of advantages like availability of bulk freight and greater remunerativeness of long hauls. The construction and improvement of pucca roads between Sainthia and other 'mandis' in the course of the last ten years has brought about those changes.

7.5. Economic characteristics of transport workers

7.5.1. *Number and type*

Two principal types of transport workers, namely, carters and truckers were studied. They have been classified into three types—A.—those who work as private carriers, *i.e.,* carry only their own produce, B.—Public carriers, *i.e.,* those carrying others' produce only and C.—those who carry their own as well as others' produce.

It was found that in this mandi there are 45 bullock cart owners who use their carts primarily for hire, 130 who use them primarily for their own purpose, and 20 who use carts partly for their own purpose and partly for others. The corresponding figures 10 years back were 90,120 and 28 respectively. Thus there has been a fall in the number of those who use bullock carts for their own purpose and a rise in those using them for hire. All the 45 who use their carts primarily for hire depend on transport business—20 wholly and 25 partly. A sample of 27 was chosen out of those 45.

There are 5 truckers who use their vehicles for hauling goods of others and 15 who use them for their own purpose. The corresponding number, 10 years back, was 1 and 3. Of the 5 truckers, 2 depend wholly and 3 partly on transport business. All were included in the sample.

Counting of traffic coming to the mandi was done on two days—Monday and Friday, the two market days of the week, on each of the three main roads —Sainthia-Kandi road, Sainthia-Suri road and Sainthia-Ahmedpur road. The total number of carts that passed to the market on those days by these roads came to 499. Out of them 52 cartmen were selected. All the three truckers who came on these roads were interviewed. 50 out of 52 carters were of A type. Of the 3 truckers one each belonged to A, B & C types.

7.5.2. *Occupational distribution*

All the 27 selected mandi bullock carters have carting as their principal occupation. Of these, 18 (66.6 per cent) have no subsidiary occupation, 6 (22.2 per cent) have cultivation as subsidiary occupation, 2 (7.4 per cent) have agricultural labour and one has carpentry as subsidiary occupation.

Of the 5 selected truckers, 4 follow hauling as a principal occupation and the fifth pursues it as a subsidiary occupation. Of the former 4,2 (50 per cent) have no subsidiary occupation, 1 (25 per cent) is also a cultivator and 1 (25 per cent) works also as a motor mechanic. The other person who

has trucking as his subsidiary occupation has cultivation as his main occupation.

Of the 52 sample carters, coming to the mandi, 43 had no subsidiary occupation to follow, a majority of them having cultivation as their principal occupation. As for the three truck operators, one had truck operation as a subsidiary occupation, his principal occupation being trading. The other two—one private and the other public carrier had no subsidiary occupation to follow.

7.5.3.*Occupational standing*

Information was gathered on the length of the period during which the principal hauliers had been in this occupation in the mandi. This is classified in the table below :

TABLE 7.7

Classification of principal hauliers by the length of service

Type of operator	Period since engaged				
	Less than 2 years	2—5 years	5—10 years	Above 10 years	Total
(1)	(2)	(3)	(4)	(5)	(6)
1. Bullock carters	2	5	8	12	27
2. Truck operators	4	—	—	—	4

All the 27 bullock carters have put in varying lengths of service as hauliers. Most of them have served long periods in this occupation—12 (44.4 per cent) for more than 10 years and only 2 (7.4 per cent) for less than 2 years. Thus the bullock carters are well-established in their profession. But the 4 truckers are new to the profession as all of them have been less than 2 years in it. The single subsidiary trucker has been engaged in this occupation for more than 10 years.

7.5.4. *Type of vehicles used*

(a) OWNERSHIP

On one bullock carter in the mandi has hired his vehicle, the rest own their carts. All the truckers own their vehicles. Of the 52 carters, who were interviewed while bringing produce to the mandi, 50 owned their carts. All truckers were using their own vehicles.

(b) MAKE

All the cart owners or hirers in the mandi as also those who brought goods from outside have only old type of vehicles.

(c) PERIOD OF RUNNING

In the case of the 4 principal truckers one had purchased his vehicle within the year while the other three had acquired them within one to three years. The subsidiary trucker has owned his vehicle for ten years now.

(d) CAPACITY OF VEHICLE

The following table shows the utilisation of the capacity of carts interviewed at the time of the traffic survey :

TABLE 7.8

Utilisation of capacity of carts by different categories of carters

Category of operator	No.	Less than ½ capacity		½ to ¾ capacity		¾ to full capacity	
		No.	%	No.	%	No.	%
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1. Private carters ..	50	17	34·0	18	36·0	15	30·0
2. Public carters ..	1	—	—	—	—	1	100·0
3. Private-*cum*-public carter	1	1	100·0	—	—	—	—
TOTAL	52	18	34·6	18	34·6	16	30·8

About 31 per cent of the carts were found to be carrying ¾ths or more of their capacity and nearly 35 per cent were carrying less than ½ of their capacity.

The average capacity of a cart according to information gathered in the mandi is almost 18 mds. on katcha roads and 23 mds. for pucca roads.

7.5.5. *Employment pattern*

(a) FULL-TIME WORKERS

The figures of the mandays of employment of the hauliers relate to the transport of agricultural commodities only. A manday was taken to be equivalent to 8 hours work. Separate figures were collected for full-time work and part-time work in the month preceding the date of investigation, and are presented in the following table :

TABLE 7.9

Classification of different carters into mandays worked during the last month

Type of occupation	Type of transport workers	Mandays worked				Average no. of mandays per month
		Less than 20	20—25	25 and above	Total	
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1. Principal	Bullock carters	6	12	4	22	19·6
	Truckers	3	—	—	3	10·7
2. Subsidiary	Bullock carters	Nil	—	—	—	—
	Truckers	1	—	—	1	16·0

More than one-half of the carters had worked for 20—25 mandays in the month. The percentage of these working 25 days and more is about 18.

The average of mandays is 19.6 for the carters and 10.7 for the truckers. The subsidiary trucker has worked for 16 mandays on a full-time basis. His average is higher than that of his counterparts who are principal hauliers. This may be because of the fact that he is principally a cultivator. In the course of marketing his own produce he may be drawing more clientele and thereby getting more employment for himself.

(b) PART-TIME WORKERS

For work on a part-time basis the averages are 6.2 and 7.5 for principal carters and truckers respectively; both the latter averages being less than the full-time averages.

SECTION II.—*Volume of traffic and modes of transport in the villages.*

7.6. Incoming traffic

7.6.1. *Volume*

The following table shows the volume of principal imports commodity-wise in the six selected villages in certain years :

TABLE 7.10

Volume and composition of incoming traffic

(Quantity in mds.)

Sl. No.	Commodities	10 years back (Qty.)	5 years back (Qty.)	1959—60 (Qty.)	%age change during the last 5 years	%age change during the last 10 years
1	(2)	(3)	(4)	(5)	(6)	(7)
1.	Paddy husk ..	6,700	6,800	7,060	+3·8	+5·4
2.	Oil cake	3,890	3,880	3,500	—(9·8)	—(10·0)
3.	Mollases ..	300	300	300	Nil	0·0
4.	Mustard	260	280	295	+5·4	+13·5
5.	Coal	950	4,850	7,780	+60·4	+718·9
6.	Kerosene ..	250	270	290	+7·4	+16·0
7.	Chemical fertilisers	Nil	Nil	150	—	
	TOTAL ..	12,350	16,380	19,375	+18·3	+56·9

Paddy husk, oil cakes and coal constitute the major portion of imports. The imports during 1959-60 were nearly 57 per cent larger than those 10 years back and 18.3 per cent higher than those five years back. The most marked change noticed is in the case of coal whose imports increased by more than seven times over the last ten years.

7.6.2. *Origin*

The following table shows the classification of imports by distance groups :

TABLE 7.11

Percentage of incoming traffic and distance groups

(Mileage groups)

Total imports (Mds.)	Below 2	2—5	5—10	10—15	15 and above
(1)	(2)	(3)	(4)	(5)	(6)
19375	—	7·3	25·9	12·1	54·7

All the imports are brought by carts. Nearly 55 per cent of the imports come from a distance of over 15 miles and about 12.1 per cent from distances between 10 and 15 miles. Only about 1/3rd covered less than 10 miles. In the roadside villages about 79 per cent of the imports come from distances over 15 miles and about 15 per cent from distances between 10—15 miles and the remaining 6 per cent come from distances less than 10 miles. Thus these villages draw their supplies from farther places.

7.7. Outgoing traffic

7.7.1. *Volume & composition*

The following table shows the volume and nature of principal commodities exported by the selected villages :

TABLE 7.12

Volume and composition of exports (in mds.)

Sl. No.	Commodities	10 years back (Qty.)	5 years back (Qty.)	59-60 (Qty.)	%age change since the last 5 yrs.	%age change since the last 10 yrs.
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1.	Paddy	9,550	9,100	10,800	+18·7	+13·1
2.	Paddy straw ..	300	500	500	Nil	+66·7
3.	Gur	710	610	660	+8·2	—(7·0)
4.	Bamboo	600	500	500	Nil	—(16·7)
5.	Sarstick	450	450	450	Nil	Nil
6.	Vegetable ..	4,450	6,050	6,600	+9·1	+48·3
	TOTAL ..	16,060	17,21	19,510	+13·4	+21·5

The exports consist mainly of paddy, paddy straw, vegetables, gur, bamboo and sarstick. Paddy accounted for about 55 per cent of the total exports in 1950—60. Vegetables came next in importance with 34 per cent. The other commodities hardly constituted 2 per cent to 3.5 per cent of the total exports. Most of the exports of vegetables was reported from two villages. The exports registered a rise of about 21.5 per cent during the last 10 years and 13.4 per cent during the last 5 years. Exports of paddy straw rose by 66.7 per cent and those of vegetables by 48.3 per cent in ten years.

7.7.2. *Seasons*

The major part of exports takes place during the months of January to April. Paddy is mainly exported during the months of January to March. Brisk months of exports of bamboo and sarstick are February to April and those for gur are March to May. Vegetables are exported for nearly 6 to 7 months *i.e.*, from September to March, the major portion, however, going during December to March. About 80 per cent of the total exports take place during the busy months.

7.7.3. *Method of marketing*

Nearly 90 per cent of the surplus is carried by the growers themselves in carts to the mandis and 10 per cent is collected by the traders from the villages. The percentage of exports collected by the itinerant traders is high, *viz.*, 42 in the case of Kapista village, one of the two roadside villages. It is because the agents of a rice mill of Sainthia purchase paddy in the village in large quantities. In the second roadside village, the entire produce is carried by the growers themselves.

7.7.4. *Distances*

The following table shows the proportion of exports going to the selected mandi and other markets :

TABLE 7.13

Percentage of outgoing traffic to the selected and other markets

Village	Distance to mandi		Percentage of exports to selected mandi	Percentage exports to nearer than the selected mandis	Percentage exports to farther mandis
	Katcha	Pucca			
(1)	(2)	(3)	(4)	(5)	(6)
1. Kapista	1	18	70·7	29·3	—
2. Gopinpur	1½	5	24·1	62·1	13·8
3. Baliharpur	3	19	78·3	21·7	—
4. Bataspur	5	—	56·0	44·0	—
5. Sherunia	8	—	50·6	49·6	—
6. Saspur	12	—	25·6	74·4	—
All villages	..	—	51·5	47·3	1·2

51.5 per cent of exports are sent to Sainthia. But about half the exports are sent by growers to the nearer mandis. The proportion of exports to the mandi has a tendency to go down with an increase in Katcha distance involved.

7.8. Households possessing carts

7.8.1. *Total*

On the date of enquiry it was found that about 31 per cent of the households, *i.e.*, 223 in the sample villages possessed 231 carts. The percentage varies from about 20 in the case of Sherunia to about 43 per cent in the case of Bataspur, which has also the largest proportion of cultivators households, *i.e.*, nearly 75 per cent. It is significant that villages near a pucca road do not show a high percentage indicating that, probably from an economic point of view, there is no special advantage on this account.

The following table shows the relationship between the number of carts and the volume of exports :

TABLE 7.14

No. of carts and annual volume of outgoing traffic

Sl. No.	Items	10 yrs. back	5 years. back	At present	% increase over last 5 years	% increase over 10 years
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1.	No. of carts	155	202	231	14·4	49·0
2.	Total qty. of exports from selected villages (mds.).. ..	16,060	17,210	19,510	13·4	21·5
3.	Volume of exports per cart (mds.)	103·6	85·2	84·5	—(0·8)	—18·4

The exports increased by 21.5 per cent in the last ten years. But the number of carts increased by 49 per cent. As the above figures show, there has been a substantial decrease in the intensity of use per cart, namely, from 103.6 mds. to 84.5 mds. or by 18.4 per cent. There has been an overall increase in the number of carts *i.e.*, 14.4 per cent over 5 years and nearly 49 per cent over 10 years.

7.8.2. *Selected households*

Out of these 223 households, 30 per cent *i.e.* 67 households were selected at random. These 67 households possessed 69 carts, two households in one village Baliharpur possessed two carts each.

(a) OCCUPATIONAL DISTRIBUTION

The table given below indicates the occupational distribution of the selected households :

TABLE 7.15

Distribution of selected households by subsidiary occupation.

Principal occupation	No. of H. Hs.	Distribution according to first subsidiary occupation					
		Cultivators	Carter	Agri. Labourers	Trader (Bamboo)	Others	Nil
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1. Cultivator.. ..	64	—	7·8	12·5	1·6	17·2	60·9
2. Agri. Labourer ..	1	—	—	—	100·0	—	—
3. Teacher	2	100·0	—	—	—	—	—

Out of these 67 households, 95.5 per cent belong to the cultivating class *i.e.*, have cultivation as their principal occupation, one is an agricultural labourer and two are teachers. Carting is not pursued as a principal occupation by any respondent. Only 5 out of 64 cultivating households, *i.e.*, about 8 per cent follow carting as a subsidiary occupation.

(b) Size of Holdings and Types of Service

The table given below shows the distribution of the selected carters according to the size of holding and type of service.

TABLE 7.16

Percentage distribution of households by type of service and size of holding.

Type of service	No. of house-holds	%age	Size of holdings (Acres)					
			Nil	0—2	2—5	5—10	10—25	25 & above
			%	%	%	%	%	%
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1. A ..	54	80·6	1·9	1·9	37·0	37·0	18·5	3·7
2. B ..	1	1·5	—	100·0	—	—	—	—
3. C1 ..	9	13·4	—	—	66·7	33·3	—	—
4. C2 ..	3	4·5	—	—	—	100·0	—	—
TOTAL ..	67		1·5	3·0	38·8	38·8	14·9	3·0

Type : A Those using carts for carrying their own produce only.
Type : C_1 Those carrying their own produce as well as that of others' own hire.
Type : C_2 Those carrying their own produce as well as that of others' but not on hire.
Type : B Carrying others' produce only.

80.6 per cent use the carts exclusively for transporting their own produce. 17.9 per cent use the carts for carrying their own as well as others' produce. Out of them ⅘ths carry produce on hire. Only one carter uses the cart solely as a public carrier. Of the 9 carters, who use carts on hire, 4 belong to roadside villages.

About 18 per cent of the households have holdings of over 10 acres and 38.8 per cent have between 2 and 5 acres and an equal percentage 5 and 10 acres. A negligible number (3 per cent) of the households possess holdings of over 25 acres. There is also one household engaged in carrying only others' produce.

7.9. Particulars of carts

7.9.1. *Period of possession*

The following table gives the distribution of 69 carts possessed by 67 selected respondents by the length of possession.

TABLE 7.17

Percentage distribution of carts according to the period of possession

Type of service	Total No. of carts	Period of possession (Years)			
		0—5	5—10	10—20	20 & above
(1)	(2)	(3)	(4)	(5)	(6)
1. A	56	41·1	37·5	19·6	1·8
2. B	1	100·0	—	—	—
3. C1	9	55·6	33·3	11·1	—
4. C2	3	—	100·0	—	—
TOTAL ..	69	42·0	39·2	17·4	1·4

42 per cent of the carts were relatively new, *i.e.*, less than 5 years' old; about 39 per cent had been purchased 5 to 10 years back and 17.4 per cent were acquired 10 to 20 years ago. The carts possessed by A type carters are relatively older than those possessed by other types of workers.

7.9.2. Expectation of life

The table given below shows the period for which the respondents expect their carts to last without and with major repairs, *i.e.*, those costing more than Rs. 50 :

TABLE 7.18

Percentage distribution of carts according to the expectation of life

Without major repairs

(Year groups)

Type of carters	No. of carts	Less than 2	2—5	5—10	10—20
(1)	(2)	(3)	(4)	(5)	(6)
1. A	56	—	1·8	57·1	41·1
2. B	1	—	—	100·0	—
3. C1	9	—	11·1	66·7	22·2
4. C2	3	—	—	33·3	66·7
TOTAL	69	—	2·9	58·0	39·1

With major r epa

Type of carters	No. of carts	Less than 5	5—10	10—20	20—50
(1)	(2)	(3)	(4)	(5)	(6)
1. A	56	—	1·8	83·9	14·3
2. B	1	—	—	100·0	—
3. C1	9	—	11·1	66·7	22·2
4. C2	3	—	—	66·7	33·3
TOTAL	69	—	2·9	81·2	15·9

About 61 per cent of the carts would last less than 10 years, (30 per cent only 2 to 5 years) without major repairs. 39.1 per cent carts are expected to last for 10 to 20 years without repairs. If major repairs are effected the life of carts is significantly increased. Nearly all the carts in that case would last over 10 years—81 per cent between 10 to 20 years and 15.9 per cent even over 20 years.

7.9.3. *Other particulars*

(a) CAPACITY

The table given below indicates the capacity of carts in different villages :

TABLE 7.19

Distribution of carts by capacity

Village	Capacity						
	8 mds.	10 mds.	12 mds.	14 mds.	15 mds.	20 mds.	Total
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1. Kapistha	—	6	8	1	—	—	15
2. Gopinpur ..	1	1	6	—	—	—	8
3. Baliharpur ..	—	6	10	—	—	—	16
4. Bataspur	1	2	4	3	1	1	12
5. Sherunia	—	—	5	1	—	—	
6. Saspur	3	3	5	1	—	—	12
TOTAL ..	5	18	38	6	1	1	69
% to TOTAL	7·2	26·0	55·0	8·8	1·5	1·5	—

The capacity of the carts varied from 8 mds. to about 20 mds. 81 per cent have a capacity of 10 to 12 mds.; 8.8 per cent have a capacity of 14 mds. and 7.2 per cent of about 8 mds. One cart can carry 15 mds. and another 20 mds. The average capacity per cent on this basis comes approximately to 11.5 mds. According to the information gathered in the mandi at the time of the traffic survey a cart, on an average, was found to be containing about 7.8 mds. This comes to—68 per cent of the capacity reported in the villages *i.e.*, an underutilisation by about 32 per cent. The capacity of carts operating in the mandi is much higher. The average capacity on katcha roads is about 18 mds. while on pucca roads it is about 23 mds. The reason may be—that they are intended for regular hire and are used for commercial purposes, whereas the village carts are meant primarily for agricultural work.

(b) TYPES OF WHEELS

All the carts are of the old type having wooden wheels with iron rings of 1½ to 2 inches width. Improved types of carts with pneumatic tyres do not seem to be in use as these cannot be plied on katcha roads.

(c) SPEED

The average speed of carts per hour works out to 2.1 miles on pucca roads and 1.3 miles on katcha roads. The carts normally move at a speed of 1 to 2 miles per hour on a katcha road and 2 to 3 miles on a pucca road. The maximum speed was reported as 2½ m.p.h. on a katcha road and 4 m p.h. on a pucca road.

7.10. Employment and income

7.10.1. *Period of employment*

The following table shows the number of days the respondents used their carts during the previous year and the previous month :

TABLE 7.20

Distribution of carts according to period of employment

Type	No.	Last year		Last month	
		No. of cart days per month	No. of days per cart per month	Total no. of cart days	No. of days per cart
(1)	(2)	(3)	(4)	(5)	(6)
1. A	56	477·6	8·5	200·0	3·6
2. B	1	8·3	8·3	—	2·0
3. C1	9	75·1	8·3	26·0	2·9
4. C2	3	19·0	6·3	18·0	6·0
TOTAL	69	580·0	8·4	244·0	3·5

A cart was used on an average for about 8.4 days a month. During the last month the average number of days for which carts were used was about 3.5.

7.10.2. *Kinds of use*

Appendix II shows the intensity of the use of carts for different purposes by types of carters during the last year.

Out of 8.4 days, 1.4 days was reported for marketing and 7.0 for other purposes. This almost represents the pattern of use by 'A' type of carters. C1 and C2 type of carters, however, use the carts for marketing purposes slightly more than those of A type while B type does not use the cart for marketing at all. The use of cart for marketing is slightly less in the roadside villages.

Among the A type, 75 per cent used the carts for marketing purposes for less than 2 days and 21.4 per cent for 2 to 5 days. Among C2 type, 2/3rds of carters, however, used them for 2—5 days for marketing purposes.

The corresponding information regarding the intensity of use of carts during the month preceding the enquiry is given in the appendix III.

About ¾ths of the carters used their carts during the last month for marketing purposes and the majority of them for 1 to 5 days only. 50 per cent used for other purposes and among them again the majority worked for less than 5 days. Of 'A' type carters, 26.8 per cent worked for over 5 days and 10.7 per cent for 10 days or more. In the two roadside villages, the carts are used for 2.3 days—0.8 day for marketing and 1.5 days for other purposes.

7.10.3. *Distances covered and hours of use of carts*

Appendix IV shows the distribution of carts according to the distance covered per day during the busy and slack seasons. A cart travels, on an

average, about 15.5 miles a day during the busy season and about 4.2 miles (*i.e.* nearly ¼th) during the slack season. All the carts were used for a distance of over 10 miles during the busy season while only one cart covered over 10 miles during the slack season. During the busy season about 78.3 per cent carts covered between 10—20 miles and the remaining over 20 miles a day. During the slack season, the majority of the carts (*i.e.*, about 75 per cent) covered less than 5 miles and 23 per cent, 5 to 10 miles a day.

87 per cent of those which ran 5 to 10 miles a day belong to A type. Thus the A type carters make a more intensive use of carts than the other types.

It was reported that carts are plied for nearly 14 hours a day for marketing operations and 4 hours a day for other operations during the busy season as against 8.3 hours and 5.6 hours respectively during the slack season. During the slack season the C1 type carters used carts for longer hours (*i.e.*, 10 hours) for marketing operations than those belonging to the A type (who use for 8 hours a day).

7.10.4. *Feeding charges*

Expenditure on the feeding of cattle is the main recurring item in the maintenance of a bullock cart. On an average, an expenditure of Rs. 27 a month or 90 nP. a day was reported which is quite low. About ¼th of the respondents reported that they were spending Re. 1 and above (with a maximum of Rs. 1.12), the remaining reported between 75 nP. and Re. 1.

7.10.5. *Income*

Aabout 15 per cent of the owners of carts use them for occupational purposes or as a secondary source of income. The carters reported that they were charging for a cart load Rs. 3.12 nP. for mandis situated at a distance of less than 5 miles, Rs. 3.90 nP. between 5—10 miles, Rs. 4.38 nP. between 10—20 miles and Rs. 4.50 nP. for those situated beyond 20 miles. Thus, the average charge per md. ranged from 25 to 37 nP. for distances up to 10 miles and 37 to 44 nP. for distances between 10 to 20 miles.

On an average, the carters reported that they were earning about Rs. 68 a year *i.e.*, Rs. 6 a month. Only two persons reported an income of over Rs. 100 in the last year, 4 reported between Rs. 50 to 100 and the remaining four between Rs. 30 and Rs. 40. Even during the previous month a carter had earned Rs. 7 on an average.

Thus, we find that carting provides a poor source of income and this explains the low number of carters running the carts on hire.

7.11. Role of trucks

7.11.1. *Frequency of visits of trucks*

It was reported that ten years back the entire road traffic used to be handled by bullock carts. Though the position is gradually changing with the improvement in the condition of roads, the bullock cart remains the most important means of transport. Trucks have not been able to penetrate into the rural area either because of katcha and difficult roads or because cultivators cannot make much use of them.

The enquiries at the village level in the selected villages revealed that, except in village Kapista (which is situated only one mile away from a

pucca road), trucks have never visited other villages. Even in village Kapista, the truck, which comes nearly twice a month, belongs to a rice mill at Sainthia and comes to collect paddy from the growers in the village. This too became possible only recently because of the construction of an all-weather road connecting the village. The village Baliharpur could also be visited by trucks as the major part of the distance is pucca but the truck cannot reach the village because of a rivulet on the way on which there is no bridge.

7.11.2. *Views of cart owners*

Though trucks do not ply to those villages at present, there were a few respondents in different villages who expressed their liking for trucks, if available. Appendix V gives their distribution.

In all about 15 per cent of the respondents expressed their desire for the use of trucks. In villages II, IV and V which are relatively near the mandi, *i.e.*, between 5 and 8 miles from it, none appeared to be anxious to use the trucks. The percentage of these liking to use trucks is higher in the case of farther villages, *i.e.*, 8.3 per cent in village Saspur which is 12 miles from the mandi and 28.6 per cent and 33.3 per cent in the case of villages Baliharpur and Kapista, which are 22 and 19 miles away as against nil in others situated nearer. Further, the appendix shows that it is only those in the higher size of holding groups who have expressed a liking for trucks. None with less than 5 acres has expressed a desire for it. 21 per cent of those with 5 to 10 acres and 50 per cent with 10 to 25 acres have expressed a desire for trucks.

7.11.3. *The Influencing factors*

The main reasons which were reported as influencing the desire for the use of trucks are given in the statement below :

TABLE 7.21

Distribution of respondents by the reasons for liking to use trucks

No. liking the use of trucks	%age of total respondents	*Percentage mentioning reasons				
		Better use of bullocks	Trucks are economical	Distance of mandi	Saving of time and energy	Bullocks price will fall
(1)	(2)	(3)	(4)	(5)	(6)	(7)
10	15	50·0	40·0	20·0	20·0	10·0

Half of those desiring to use trucks expected that trucks would release bullocks for their agricultural purposes. About 40 per cent regarded trucks would be economical. The other reasons mentioned related to the saving of time and energy. Further it may be added that 90 per cent of these desired to use trucks for the export of paddy.

*Some respondents have given more than one reason.

7.11.4. *The freight desired*

The respondents willing to use trucks said they were ready to pay 25 nP. per maund in the case of paddy in villages I and III. A few are ready to pay up to 37 nP. in village I. These rates are 5 to 10 nP. less than the hire charges by the bullock carts.

7.11.5. *Future prospects*

The knowledgeable persons thought that whereas ten years back almost the entire road traffic used to be handled by bullock carts, the position has changed. With the improvement in the condition of roads it is estimated that now about 25 per cent of the goods arriving at the market from the hinterland are brought by trucks. Up to a distance of 10 miles, nearly the entire traffic is carried by carts. As the distance increases, the importance of trucks rises and beyond 25 miles most of the goods are carried by them or by rail.

Most villages are either connected wholly or mostly by katcha roads which are not suitable for trucks, particularly, during the monsoons. In the existing circumstances the existence of katcha roads puts bullock carts at an advantage over trucks. Other favourable factors are :—

(a) The bullock carts are needed for farming operations. They, therefore, provide traction for transport almost without additional cost.

(b) Consignments generally leave villages in small lots, as most of the produce is brought to the market by growers themselves without previous collection or pooling by itinerant traders or cooperatives.

(c) During the return journey from the market after the disposal of the produce, different commodities needed for household consumption, fodder etc. are also brought back to the village in the same cart in small lots.

(d) In the case of short hauls, transport by trucks is costlier.

(e) Most of the agricultural commodities do not require any special care in hauling.

(f) Another factor reported is that when prices of agricultural commodities are low, the growers have preference to bring their produce in their own carts so as to avoid additional cost of transport.

APPENDIX—I

Distribution of carters in different distance groups by the frequency of trips during the busy season and the slack season.

Distance range	No. relevant	No. of carters in different trip frequency groups. Busy season: Nil	Busy season: One and less than one	Busy season: 2-5 times	Busy season: 5 and above	Slack season: Nil	Slack season: One and less than one	Slack season: 2-5 times	Slack season: 5 and above
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1. Less than 2 miles ..	2	Nil	1	1	—	1	1	—	Nil
2. 2-5 miles	14	„	—	9	5	—	11	3	„
3. 5-10 miles	28	„	1	22	5	3	20	5	„
4. 10-20 miles	7	„	2	3	2	1	6	—	„
5. 20 miles and above..	1	„	—	1	—	—	1	—	„
TOTAL ..	52	„	4	36	12	5	39	8	Nil

APPENDIX—II

Percentage distribution of carts according to days of employment for marketing and other purposes.

A. LAST YEAR

Type	Purpose	No.	No. of days in groups per month							Average no. of days per month
			Nil	1-2	2-5	5-10	10-15	15 and 20	20 and above	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
A ..	M	56	1·8	75·0	21·4	1·8	—	—	—	1·3
	O	56	—	1·8	23·2	60·7	8·9	3·6	1·8	7·2
	All	56	—	—	14·3	53·6	19·6	7·1	5·4	8·5
B ..	M	1	100·0	—	—	—	—	—	—	Nil
	O	1	—	—	—	100·0	—	—	—	8·3
	All	1	—	—	—	100·0	—	—	—	8·3
C1 ..	M	9	—	77·8	11·1	11·1	—	—	—	1·5
	O	9	—	—	22·2	66·7	11·1	—	—	6·8
	All	9	—	—	—	66·7	33·3	—	—	8·3
C2 ..	M	3	—	33·3	66·7	—	—	—	—	1·8
	O	3	—	—	33·3	66·7	—	—	—	4·5
	All	3	—	—	—	100·0	—	—	—	6·3
TOTAL ..	M	69	2·9	72·5	21·7	2·9	—	—	—	1·4
	O	69	—	1·4	23·2	62·3	8·7	2·9	1·4	7·0
	All	69	—	—	11·6	58·0	20·3	5·8	4·3	8·4

M=Marketing
O=Other purposes
All=All purposes

APPENDIX—III

Percentage distribution of carts according to days of employment for marketing and other purposes.

B. LAST MONTH

Type	Purpose	No.	No. of days in groups: Nil	1-2	2-5	5-10	10-15	15 & above	Average no. of days
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
A	M	56	23·2	35·7	39·3	1·8	—	—	3·6
	O	56	50·0	8·9	28·6	3·6	7·1	1·8	Nil
	All	56	10·7	19·6	42·9	16·1	8·9	1·8	Nil
B	M	1	100·0	—	—	—	—	—	Nil
	O	1	100·0	—	—	—	—	—	Nil
	All	1	100·0	—	—	—	—	—	Nil
C1	M	9	33·3	33·3	33·3	—	—	—	1·2
	O	9	44·4	11·1	44·4	—	—	—	1·7
	All	9	—	—	78·8	22·2	—	—	2·9
C2	M	3	—	33·3	33·3	33.3	—	—	4·3
	O	3	66·7	—	—	33·3	—	—	1·7
	All	3	—	33·3	—	66·7	—	—	6·0
TOTAL	M	69	24·6	34·8	37·7	2·9	—	—	1·5
	O	69	50·7	8·7	29·0	4·4	5·8	1·4	2·0
	All	69	10·1	17·4	44·9	18·8	7·3	2·4	3·5

M=Marketing
O=Other purposes
All=All purposes

APPENDIX—IV

Distribution of carts according to distance covered per day (mileage group)

Type	Busy season								Overall		Slack season					Overall
	0-10		10-15		15-20		20 & above		average	0-5	5-10			10-15		average
	No.	Avg.	No.	Avg.	No.	Avg.	No.	Avg.	No.	Avg.	No.	Avg.	Avg.	No.	Avg.	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
A	—	—	24	11·4	21	16·8	11	20·7	15·2	41	3·4	14	6·4	1	10·0	4·2
B	—	—	1	10·0	—	—	—	—	10·0	1	—	—	—	—	—	4·0
C1	—	—	1	13·0	4	16·0	4	20·5	17·7	7	3·7	2	7·0	—	—	4.4
C2	—	—	1	13·0	2	16·0	—	—	15·0	3	3·0	—	—	—	—	3.0
TOTAL	—	—	27	11·5	27	16·6	15	20·7	15·5	52	3·4	16	6·4	1	10·0	4·2

Av=Average distance (in miles) per cart.

APPENDIX—V

Distribution of respondents desiring the use of trucks according to size of holdings.

Village	Distance from Pucca road	Distance from Mandi	Total respondents	%age liking the use of trucks		Size of holding groups (acres)									
						0-2		2-5		5-10		10-25		25 & above	
				No.	%	No. relevant	% liking	No. relevant	% liking	No. relevant	% liking	No. relevant	% liking	No. relevant	% liking
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
I ..	1	19	15	5	33·3	—	—	4	Nil	7	28·6	4	75·0	—	—
II ..	1·5	6·5	8	Nil	Nil	1	—	5	Nil	1	Nil	1	Nil	—	—
III ..	3	22	14	4	28·6	1	Nil	2	Nil	6	33·3	4	50·0	1	Nil
IV ..	5	5	12	Nil	Nil	—	—	10	Nil	1	Nil	1	Nil	—	—
V ..	8	8	6	Nil	Nil	—	—	4	Nil	1	Nil	—	—	1	Nil
VI ..	12	12	12	1	8·3	1	Nil	3	Nil	8	12·5	—	—	—	—
TOTAL	—	—	67	10	14·9	3	Nil	28	Nil	24	20·8	10	50·0	2	Nil

PART III

CHAPTER VIII

SUMMING UP

8.1. Introduction

In this chapter, an attempt has been made to put together the salient findings of the case studies. It is not a complete summary. Nor has it been considered advisable to aggregate the data for the five mandis and work out over-all averages. An average picture of five type cases has not much meaning and has much less of a statistical validity. All that has been done is to sort out the findings on certain key aspects, *e.g.*, trends in volume of traffic in the mandi and the villages, the modes of transport used for them, changes in their relative importance, their economics, scope and prospects. The findings on these aspects are recapitulated and summed up in this chapter. The approach has been to analyse the range of variation in these along with their underlying reasons.

I. Traffic and Transport in the Mandi

The nature and volume of traffic

8.2. Volume

The mandis serve as entrepot markets, *i.e.*, collection and despatching or distribution centres for agricultural produce marketed by the farmers in the hinterland and as distributing markets for non-agricultural consumer goods needed in the rural areas. In respect of the first function, the markets are generally of the primary type with elements of secondary functions thrown in in varying degree. As for the second group of functions, they serve usually as consumer market centres.

The following table shows the changes in the volume of incoming and outgoing traffic and in the relative importance of local and export demand in these mandis over the ten years since 1949-50 :

Table 8.1

Volume of traffic to and from the mandi in 1959-60 & 1949-50

Mandi	State	% increase in 1959-60 over 1949-50		% outgoings to incomings	
		Incoming traffic	Outgoing traffic	1959-60	1949-50
(1)	(2)	(3)	(4)	(5)	(6)
Tindivanam	Madras	+14·3*	N.A.	85·2	N.A.
Lasalgaon	Maharashtra	+191·4	+72·3	66·1	111·8
Sirhind	Punjab	+100·3	+136·8	78·5	67·2
Gorakhpur	U.P.	—(0·1)	+22·6	38·8	31·6
Salnthia	West Bengal	+133·6	+99·3	83·1	97·9

*Groundnut only.

During the last 10 years (*i.e.*, over the period roughly from 1950 to 1960), 3 out of 5 mandis have witnessed an appreciable rise in the volume of incoming traffic, the incresae ranging from 100 to 191 per cent. Figures for one (Tindivanam) are incomplete but would probably be in this range also if estimates are made after taking into account the very large increase in the output of paddy in these areas during this period. It is only in Gorakhpur that there has been practically no change. The reasons are two-fold. First, the yield of paddy and other foodgrains in this area has not recorded significant increases; secondly, the arrivals from the bordering areas of Nepal have gone down significantly. Some changes in composition have also occurred in one or two cases. These changes have been brought about by a number of factors, namely, changes in the cropping pattern in the market area, shifts in the relative importance of mandis and relaxation or imposition of restrictions on movement of foodgrains. The last factor has led to a spurt in arrivals in one case and to a precipitious decline in another. In general, therefore, incoming traffic has increased considerably in the mandis over this period.

Like the incoming traffic, the outgoing traffic has also risen appreciably during the last 10 years, from 23 per cent to 137 per cent in different markets. A slightly larger proportion of incoming volume is sent out now than 10 years ago in Sirhind and Gorakhpur. As the arrivals have remained stationary in Gorakhpur, the quantity retained for local distribution to consumers and other sub-markets has declined. On the other hand, this quantity has risen sharply in Lasalgaon where, despite a doubling of arrivals, the proportion of outgoings has declined.

8.3. Seasonal variations

Apart from the total volume and the broad structure of traffic, its flow, *i.e.*, variation in volume from month to month or period to period also has a bearing on transport requirements and, to some extent, reflects transport methods and standards. In none of these mandis is the flow evenly distributed throughout the year. It depends mainly on two factors : the marketing season, and the facilities and ease of transportability, acting separately and jointly. The marketing activity, its commencement, duration and fluctuation, depend on the nature of crops, their harvesting season, the holding capacity of the grower and other factors. It begins after the harvests are reaped, *i.e.*, in October-November for Kharif crops and March-April for the Rabi ones and remains at a high level for two to three months thereafter. Its duration and fluctuation are influenced by the holding capacity of the growers, price prospects as assessed by the larger cultivators and the general state as well as seasonal condition of the roads. As a consequence of the inter-play of these forces, 2/3 to 4/5 of the inward traffic takes place in about six out of 12 months. During the remaining months, traffic is at a low ebb depending on whether both marketing activity and seasonal factors or only one of these is unfavourable. The construction and/or improvement of roads that has taken place during the last ten years has tended to reduce the monsoon—time dip in the flow of arrivals in some areas specially in Sainthia.

Though the despatches are generally at a high level in the first two post-harvest quarters, the seasonal variations are, in general, less marked in the outgoing than in the incoming traffic.

8.4. Intra-market traffic

The total volume of traffic carried by different modes of transport in a market area is made up of not only the arrivals to and despatches from the mandi or market centre, but also movement within the market centre or mandi and movements from the mandi and other sub-centres to the villages in the hinterland. In terms of symbols, this identity may be written as—T=Ta+Td+Ti+Tb, where 'Ta' stands for the volume of inward traffic from the villages as well as outside, 'Td' for outgoing traffic, 'Ti' for intra-mandi movements and 'Tb' for the volume of goods going back to the villages. Some idea of the nature of 'Tb' will be given in a later section on the basis of data obtained from the villages. As for the remaining component, data on the volume of intra-mandi traffic were not collected. But since this is known to be directly related to the incoming traffic (*i.e.*, Ti=f(Ta) it can be safely concluded that this has also increased considerably and proportionately over the ten-year period.

Modes of transport

8.5. Intra-mandi traffic

For intra-mandi movement, only the non-mechanical modes of transport like bullock carts and thelas are generally used on account of short distances which such traffic has to cover. Trucks have not yet made much of a dent on this traffic pattern.

8.6. Incoming traffic

Arrivals come mostly by roads. In two of the selected mandis, practically nothing comes by rail. In the other three, railways handle between 20 and 50 per cent of the traffic. The relative share of carts in the road-borne arrivals is shown in the figures given in table 8.2.

TABLE 8.2

Proportion (per cent) of road-borne arrivals handled by carts

Mandi	1949-50	1959-60
(1)	(2)	(3)
Tindivanam	100	96
Lasalgaon	84	70
Sirhind	92	94
Gorakhpur	95	58
Sainthia	98	79

Carts handle 58 to 96 per cent of the road-borne inward traffic. It is significant that the share of carts *vis-a-vis* that of trucks has witnessed a decline in four mandis, the decline being very sharp in Gorakhpur, significantly large in Sainthia and Lasalgaon and not significant in Tindivanam. The main reason has been the rise in traffic and availability of pucca roads on which trucks can ply. Only in Lasalgaon trucks ply even on katcha roads and have gained over carts on such roads also. On the other hand, in spite of the entire traffic being on pucca roads, inward traffic continues to be the stronghold of carts in Tindivanam. The trucks ply mainly on longer distance hauls in these areas and have not tried to penetrate in the 'local' traffic.

In Gorakhpur alone the absolute quantity has declined appreciably. There has been a phenomenal rise in the absolute quantity carried by carts not only in Lasalgaon but also in Sainthia, despite a marked fall in their relative share.

The rise in the traffic handled by trucks has been much more than in that handled by carts. In Lasalgaon and Sainthia, whereas the rise in truck traffic has been of the order of 421 and 2,261 per cent, the cart traffic has risen only by 146 and 73 per cent respectively. In Gorakhpur, the cart traffic has declined but the truck traffic has gone up. In only Sirhind has the rise in cart traffic—been more than that in truck traffic, namely, 287 and 204 per cent respectively.

The share of trucks is generally higher in the higher distance groups. They handle 90 per cent of the traffic originating from points between 10 and 20 miles away in Sirhind and 95—100 per cent of that coming from beyond 20 miles in Gorakhpur. All traffic from beyond 25 miles in Sainthia comes by trucks. On the other hand, their share is low in the lower distance groups, *e.g.*, 10—14 per cent in distances below 5 miles in Lasalgaon. All traffic from within 5 miles in Sirhind and Sainthia comes by carts. The share of trucks is relatively greater in the more valuable crops, *e.g.*, cotton in Sirhind, onions in Lasalgaon and paddy in Sainthia.

Carts come to the mandis from long distances. In Gorakhpur, 43 per cent of carters interviewed were found to be coming from points more than 20 miles away. In fact, 28 to 66 per cent of the carters in 4 mandis came from the 10—20 miles distance groups. In 3 of the 5 mandis, less than 10 per cent of the carters came from within a distance of 5 miles.

8.7. Outgoing traffic

Rail Vs. Road

The principal channels of despatches are the railways and the roads. The railways handle 58 per cent to 75 per cent of despatches except in Tindivanam as shown in the following table :

TABLE 8.3

Modes of transport used for outgoing traffic in 1959-60

Mandi	% handled by		% of the road-borne traffic handled by trucks
	Road	Rail	
(1)	(2)	(3)	(4)
Tindivanam	90·0	10·0	100·0
Lasalgaon	27·0	73·0	100·0
Sirhind	42.0	58·0	100·0
Gorakhpur	42.0	58·0	70·0
Sainthia	25·0	75·0	46·0

As despatches are generally bound for long distances, railways, are the natural and preferred modes of transport. But the roads not only account

for substantial proportions of this traffic in 2 mandis and constitute the dominant channel in Tindivanam, but have also wrested considerable traffic from the railways during the last 10 years in all these mandis. These tendencies have not occurred because of any relative superiority of roads in respect of freight rate or of advantages of distance and nature of trade, *e.g.*, predominance of perishable goods. These have resulted mostly from operational factors, such as shortage of wagons, multiplicity of in-transit handlings, pilferage, dilatory procedure for claiming damages from railways. Even in Tindivanam, where the cost of road transport has been considerably reduced with the availability of diesel trucks and their competitive strength, increased, shortage of wagons was an important factor so much so that the railways did not suffer from lack of demand. Other contributory factors have been the facility of door-to-door delivery, saving of time, etc. In some areas, construction and improvement of roads have been important enabling developments. It is reported that the loss of traffic which has been considerable everywhere would not have occurred but for these factors. Only in Gorakhpur and Sainthia there is some clear-cut distribution of this traffic between rail and road on the basis of distance—the shorter distances being served by trucks and the longer by railways.

Trucks Vs. Carts

The figures in Table 8.3 also show that trucks are the dominant mode of road transport in despatches from all the markets except Sainthia. The inter-mandi road traffic is, almost all, handled by trucks. Consequently, the entire outward traffic, not carried by village carts that come to the mandi and take their requirements on return, for which estimates are not available—is handled by trucks in 3 mandis, while 70 and 46 per cent of such traffic are handled by trucks in Gorakhpur and Sainthia respectively. These comparatively small figures reflect the relatively poor development of roads in these two areas. As more of highways are constructed in these areas, the share of trucks in despatches is likely to go up further.

The affinity between distance and mode of transport is clearly discernible in respect of road transport. The complete exclusion of carts in the despatches from Tindivanam, Lasalgaon and Sirhind is due to longer distances to which goods are exported from these markets as compared with those from Gorakhpur and Sainthia. But even in the last two markets, trucks have gained heavily over carts during the last 10 years. This share has risen in the former from 33 to 70 per cent during this period. The shift has been even more phenomenal in Sainthia where 10 years ago the entire outgoing traffic used to be the monopoly of carts. This transformation has been made possible by the rapid progress in road construction.

Thus road construction has enabled trucks to wrest traffic both from the railways and the carts and bids fare to bring about their supremacy in this field of transport in the near future.

Economic characteristics of transport workers

8.8. Nature of service

Carts and trucks engaged in transport functions in the market area have been surveyed in two groups, those that operate in and from the mandi and those found in the villages in the hinterland. Table 8.4 shows the relative importance of different types of transport services performed by transport workers in the mandi and by those coming to the mandi.

TABLE 8.4

Classification of hauliers by nature of work

Market	(Percentage to total number of hauliers)					
	Carters residing in mandi			Carters coming to mandi		
	A	B	C	A	B	C
1	2	3	4	5	6	7
Tindivanam ..	—	N.A.	—	97	3	Nil
Lasalgaon ..	Nil	100	Nil	90	10	Nil
Sirhind	Nil	100	Nil	94	6	Nil
Gorakhpur ..	Nil	100	Nil	67	23	10
Sainthia	67	23	10	96	4	Nil

A=Carrying their own produce only.

B=Plying for hire only.

C=Carrying their own produce as well as plying for hire.

The carts and trucks operating from and in the mandi (market centre) generally ply for hire. Only in Sainthia mandi, there is a large number of carters handling their own produce. As has been seen above, the carts do not have much scope for handling outward traffic. Their main work lies in the mandi itself, in the transport of goods from the shops to godowns, mills, railway stations and similar points. On the other hand, the carters bringing produce to the mandi from the villages were usually bringing their own produce. Only in Gorakhpur there were 10 amongst 30 who were bringing others' produce (B & C).

8.9. Occupation

Between 80 and 100 per cent of the sample carters in the mandis had carting as principal occupation. On the other hand, amongst those coming from the villages, usually the majority were cultivators.

8.10. Type and ownership

Almost all the carts and trucks possessed by the sample carters and truckers residing in the mandis and by those coming from outside were owned by the operators. The carts being used in 4 mandis were all of the old type. Sirhind is the only exception where all the sample carts in the mandi were of the improved type with pneumatic tyres.

8.11. Utilisation of carts

The sample carts which were coming from the villages were generally not fully loaded as shown by figures in Table 8.5.

TABLE 8.5

Percentage distribution of carters interviewed by the extent of utilisation

Market	Extent of utilisation		
	Less than half	1/2 to 3/4	Less than 3/4
(1)	(2)	(3)	(4)
Tindivanam	16·7	16·7	33·4
Lasalgaon	4·8	23·8	28·6
Sirhind	27·8	11·1	38·9
Gorakhpur	6·7	16·6	23·3
Sainthia	34·6	34·6	69·2

The percentage of those carrying less than one-half of their capacity ranged from 5 to 35, while those carrying from ½ths accounted for between 11 to 35 per cent. Altogether 23 to 69 per cent of the carts carried less than ¾ths of their capacity. This points to the scope either for saving in transport resources (bullocks and carts) or for their further utilization.

Of the sample carters in the mandi those who followed transport as a principal occupation usually got full-time (8 hours) work on an average for 20 to 25 days in a month. The corresponding figure for trucks was 8 to 22 days in a month. Beacuse of the relatively larger carrying capacity of the trucks, the business they get is somewhat more intermittent than the carts.

II. Traffic and Transport in the Village

8.12. Incoming traffic

Fertilizers, oil cakes, cement, diesel oil, kerosene oil are the main commodities which are brought to the villages from outside. In Gorakhpur and Lasalgaon areas foodgrains like rice, wheat and bajra are also brought.

Table 8.6 shows the change in the volume of incoming traffic during the last 5 years and last 10 years.

Table 8.6

Percentage rise in the volume of incoming traffic in 1959-60 *as compared with* 1949-50 *and* 1954-55

Mandi	Percentage rise in incoming traffic	
	Over 1949-50	Over 1954-55
(1)	(2)	(3)
Tindivanam	114 to 131	38 to 50
Lasalgaon	N.A.	103·4
Sirhind	51·5	29·2
Gorakhpur	520·6	360·4
Sainthia	56·9	18·3

The volume of incoming traffic to the villages was higher in 1959-60 than that in 1949-50 by between 52 and 131 per cent except in Gorakhpur where the imports leapt up because in 4 of the 6 sample villages, fair price shops were opened by the government and these catered to the needs of the neighbouring villages.

In Lasalgaon and Tindivanam areas this occurred mainly because of a rise in the imports of fertilizers, oil-cakes and manures and in Sirhind on account of increase in imports of chemical fertilizers and cement. In Sainthia, coal and in Gorakhpur foodgrains mainly accounted for this rise.

8.13. Outgoing traffic

Volume

Sugarcane and gur, onion, groundnut and cotton among the so-called cash crops and paddy, wheat, maize among the food crops account for the bulk of the exports from the villages.

Between 1949-50 and 1959-60 the volume of the outgoing traffic increased considerably as shown by figures in Table 8.7.

TABLE 8.7

Percentage change in the volume of outgoing traffic in 1959-60

Mandi	Since 1949-50	Since 1954-55
	(2)	(3)
Tindivanam	22·4	1·4
Lasalgaon	N.A.	3·5
Sirhind	39·2	65·5
Gorakhpur	59·9	25·0
Sainthia	21.5	13·4

The increase was about 64 per cent (over last 5 years) and 60 per cent in two mandi areas *viz.*, those of Lasalgaon and Gorakhpur, about 40 per cent in Sirhind and 22 per cent in Sainthia and Tindivanam. The increase in the villages near a pucca road was of the order of about 77 per cent, during the last 10 years, *i.e.*, much more than the average in the other parts of the market area. The position, however, shows considerable variation among the markets. In Lasalgaon and Sirhind, the rise in the outgoing traffic from the villages on or near pucca roads was about 140 and 74 per cent against the average rise of 64 and 40 per cent respectively. The difference was not appreciable in the Tindivanam area. The rise in the near-pucca-road villages was less than the average in Gorakhpur due to large rise in the export of sugarcane from interior villages. In Sainthia, whereas the outgoing traffic from all villages increased by about 22 per cent on an average, there was a decline of about 11 per cent in the export from the villages on or near a pucca road, mainly because of a fall in the exports of paddy from the road-side villages in the sample.

Destinations

The growers ordinarily prefer to send the commodities to the market yards or sub-mandis located near the villages. Except in Tindivanam area, a good percentage of exports (90 per cent in Gorakhpur, about 50 per cent in Sirhind and Sainthia and 58 per cent in Lasalgaon) went to the nearer sub-mandis. The proportion is particularly high in Gorakhpur where sugarcane is collected by the mills at places situated near the villages. In the Tindivanam market area, on the other hand, the whole of the produce goes to the selected mandi because of the absence of nearer sub-mandis.

This preference of cultivators for sub-mandis is attributable to the following factors :

(a) Growers are able to utilise their own carts which involve no extra cost;

(b) Carts are cheap for short distances;

(c) Even small quantities can be disposed of.

However, they like to send certain commodities even to other markets outside the mandi hinterland, if such markets specialize particularly in those commodities as they offer prospects of better returns. Thus, in the Sirhind area cultivators send Gur and Shakkar to the Karuli market.

8.14. Place of agencies in marketing

Most of the produce is brought by the growers to the mandis, only a very small proportion being collected in the villages by itinerant traders. Exceptions were found only in the following few cases. In Sirhind area, all the onion from one interior village is collected by traders. From another village, Mulepur, about one-fifth is collected by traders. In Sainthia area, paddy from Kapista, situated near a pucca road, is collected by mill agents. In Gorakhpur area, too, it is only from one village, Gopalpur, that a major portion of the marketable surplus is collected by traders.

8.15. Modes of transport used for incoming traffic

The position regarding modes of transport used in carrying traffic from the villages is conveyed by data in Table 8.2. Attention in the village surveys has, therefore, been given to the transport used for imports to the villages. In the hinterland villages of three mandis, Tindivanam, Sainthia and Sirhind, either all or almost all the incoming traffic comes by carts. In the selected villages of Tindivanam, trucks are not used at all. In Sainthia and Sirhind areas, trucks normally do not visit the villages because long distances of katcha roads are involved. The proportion brought by trucks to the villages is the largest, 77 per cent in Gorakhpur. But all the commodities which came from distances less than 15 miles were found to have been brought by carts. In fact, the trucks have been used mainly for the import of foodgrains for Government shops. In Lasalgaon, also, though a major portion is imported by carts, quite a good proportion, 28.6 per cent was brought by trucks. When the hauling distance does not exceed 5 miles, only carts are used.

In some of the villages situated on or near pucca roads, trucks are used much more. In Gorakhpur area, the bulk, about 84 per cent of imports to such villages was brought by trucks from distances exceeding 15 miles. In Lasalgaon area, in one village situated near a pucca road nearly 64 per cent was brought by trucks. In Sirhind, though only 0.4 per cent of the incoming traffic to the selected villages was brought by trucks, in a village situated on a pucca road, about 12 per cent was brought by trucks.

Economic characteristics of transport workers

8.16. Cart-possessing households

In Lasalgaon and Sainthia areas, over 30 per cent of the households in the villages possess carts, while the proportion is small in Tindivanam, namely, 11.4 per cent and smaller still in Gorakhpur, *viz.*, about 5 per cent. The poverty of cultivators, the relatively small size of holdings and the low volume of marketed surplus are mainly responsible for this.

Normally, carts are possessed by cultivator-households. In the villages of the market areas studied, 90 per cent or more of the carts belong to cultivating families and in two of these, *viz.*, Lasalgaon and Sirhind, almost all.

8.17. Number of carts and volume of exports

During the last 10 years there has generally been an increase in the number of carts, as shown by figures in Table 8.8.

TABLE 8.8

Changes in the number of carts, volume of exports and their ratio during the last two quinquennia

Mandi area	Percentage change (+ or —) from								
	1949-50 to 1954-55			1954-55 to 1959-60			1949-50 to 1959-60		
	No. of carts	Volume of exports		No. of carts	Volume of exports		No. of carts	Volume of exports	
		Total	Per cart		Total	Per cart		Total	Per cart
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Tindivanam	1·7	20·7	18·6	14·4	1·4	—(11·5)	16·4	22·4	5·2
Lasalgaon	20·4	N.A.	N.A.	10·6	N.A.	48·0	33·1	N.A.	N.A.
Sirlind	16·5	20·5	3·6	18·4	15·5	—(2·4)	37·7	39·2	1·1
Gorakhpur	—(14·2)	27·9	48·9	—(2·3)	25·0	28·1	—(16·3)	59·9	90·8
Sainthia	30·3	7·2	—(17·8)	14·4	13·4	—(0·8)	49·0	21·5	—(18·4)

The number of carts has risen by about 16 to 49 per cent in 4 of the selected mandi areas, being most marked in the case of Lasalgaon, Sirhind and Sainthia. Rise in production and the prosperity of the cultivators contributed towards this increase. In the Sirhind area, however, the increase is also attributed to the introduction of paddy, rise in the area under sugarcane and the break-up of joint families. In Kapista village of Sainthia, the number of carts has increased because of an improvement in the road connecting it to the mandi. It is only in the selected villages of the Gorakhpur mandi that the total number of carts has decreased by about 16 per cent mainly because of a meteoric fall in the number of carts in one village, Mithaura, due to restrictions on the movement of goods from Nepal and the increasing use of trucks. In the remaining villages there has been a rise of 83 per cent.

The number of carts rose during both the preceding quinquennia in four out of five mandi areas. The rate of rise in 3 mandis *viz.*, Lasalgaon, Sirhind and Sainthia slowed down considerably in the latter quinquennium. In Tindivanam the rate of rise was accelerated substantially as here trucks have made little in-roads in the rural areas. In Gorakhpur area an entirely different tendency has been noticed. Here the number of carts has been declining due to the decrease in the number of carts in one village.

The rise in the number of carts has been much less than that in the volume of exports from the villages in 3 mandi areas (including Gorakhpur) with the result that the volume of exports per cart has risen by 5 per cent to 91 per cent. In Sainthia on the other hand, there has been an appreciable decline as the rise in the number of carts was faster than that in exports. Taking the last 10 years, in three mandi areas both the number of carts and volume of exports have risen. But the rate of increase being slower for the former, in two of them the volume of exports per cart has gone up by 1 to 5 per cent. In both these areas, rise in the number of carts was much slower in the earlier half of this period, but the leeway was made good considerably in the latter half. In Gorakhpur, where there has been a decline in the number of carts accompanied by a marked rise in the volume of exports, the traffic per cart has naturally shot up by about 91 per cent. The decline, however, occurred largely in the earlier quinquennium and in one village only. In Sainthia, on the other hand, the number of carts has risen much faster than the volume of exports, bringing about a decline in the volume of traffic per cart. Here also, the disparity was much greater in the earlier quinquennium. Thus, there is a tendency for counteracting forces to appear when there is a disequilibrium between the number of carts and the volume of outgoing traffic.

8.18. Type of service

Village carts are generally used for private purposes. Only 1 cart out of the entire sample of 320 has been used purely for hiring and that for transporting wood from the forest. Only about 22 per cent of the carts are used partly for hire. The rest are used either exclusively for personal use or partly also for carrying the produce of others without payment. The percentage of those using their carts partly for hire ranges from 8 to 61. In the roadside villages, use for hire or carrying others' produce is a little greater, being markedly less in one mandi area and slightly less in another but appreciably higher in the remaining three.

8.19. Make and capacity of carts

Almost all carts are of the ordinary type, having wooden wheels and iron rings. Even the villages in the Sirhind mandi, where improved types of carts (with pneumatic tyres) have come into vogue, are no exception. The average capacity of carts ranges widely. Carts in Sirhind are twice as capacious as those in Sainthia and Tindivanam, with Lasalgaon and Gorakhpur in-between.

The average load carried by carts interviewed at the time of the traffic survey was found to be appreciably smaller than the average capacity reported for village carts. The difference or the extent of under-utilisation ranged from 12 to 32 per cent. The capacity of carts possessed by hauliers in the mandi is generally much greater. This may be due to both requirements and the condition of roads. The village carts being used generally for carrying small market lots of individual farmers and on katcha roads tend to be smaller than those in the mandi which are used for commercial purposes on pucca roads and over short distances.

8.20. Extent and nature of use

Table 8.9 shows the extent and pattern of use of carts per month for different mandi areas during the year preceding the date of inquiry.

TABLE 8.9

Extent and pattern of use of carts per month during the preceding year.

Mandi area	No. of days for which carts were used	Proportion (in %) of use attributable to	
		Marketing purposes	Other purposes
(1)	(2)	(3)	(4)
Tindivanam	2·7	55	45
Lasalgoan	13·4	36	64
Sirhind	13·1	4	96
Gorakhpur	2·5	40	60
Sainthia	8·4	17	83

The carts in villages are used for very few days. During the year preceding the date of inquiry they were used per month, on an average, for only about 3 days in two areas, 8 days in one and 13 days in the remaining two. There is not much difference in the pattern of use among private carriers and hirers, the period of use by the latter being slightly higher in 3 and slightly lower in 2 mandi areas.

Carts are generally used more for agricultural and other operations than for marketing. Of the total time for which a cart was used, the proportion attributed to marketing was as low as 4 per cent in Sirhind and 17 per cent in Sainthia. In Tindivanam where use for marketing purposes was the highest, the proportion was 55 per cent. The relative importance of use for marketing is higher in two mandi areas among those who work on hire.

On the days on which carts are used, they cover a distance ranging, on an average, from about 7 miles to 16 miles during the busy months. In slack months the run is much shorter.

8.21. Income

Given the non-commercial nature of use, the infrequency of use and the preponderance of agricultural operations in the use pattern, it follows that carts are not a significant source of income to the agriculturists (the professional carters excluded).

It was reported that the carts provide, on an average, an income of about Rs. 60 per year in the Gorakhpur area where the number of days for which carts were used was the lowest. In Sainthia area, where the carts were used for a longer period, on an average, the annual income derived came to about Rs. 68. In Lasalgaon and Sirhind areas, the additional gross income were much higher, Rs. 238 and Rs. 190 respectively. It is not only the number of days for which a cart is used but also the commercial content in its use which determine the income from carts.

8.22. Visits of trucks to villages

The data relating to the frequency of visits of trucks to the villages bring out that till 10 years back (except in the case of one village each, in two mandi areas), the trucks were not visiting the villages at all. The position has changed but little during the intervening decades but the changes are incident and significant. In Tindivanam area, even now trucks do not visit the selected villages. In Sainthia, the frequency of visits by trucks has increased in only one of the six sample villages because of the recent improvement on the connecting road. In Sirhind, the change is also marked in only one village where, despite its being in the interior, more trucks have begun plying. This is due to the very large increase in the production of onion which is collected by traders from the village by trucks. In Lasalgaon, there has been some improvement in the use of trucks. In one village, it is attributed to the improvement of the connecting road. In another village, the contributing factors are rise in the production of cotton and the prospect of getting better prices at Lasalgaon. Even in village Nimgaonjali, richer cultivators join together to engage trucks in the hope of getting higher prices in the main mandi. In Gorakhpur area, the use of trucks was reported particularly from two of the sample villages, where the change was attributed to the construction of metalled road.

In the villages situated on or near a pucca road, the frequency of transport by trucks has also increased a little more. Thus the two main factors favourable for trucks have been on one side, the improvement in the condition of roads and on the other, the rise in the production of certain so-called 'cash crops' *e.g.*, onion, cotton, which are either perishable or relatively more valuable. Another factor, noticeable to some extent, is the correlation of truck transport with the functional organisation of marketing agencies or links. A shortening of these links through telescoping or rationalisation may make for a larger penetration of trucks into the villages. As a case in point, mention may be made of the change noticed in Sainthia of the role of rice mills which have in recent years been engaging not only in milling but also in wholesale purchase and trucking. This has led to more of penetration of trucks into the villages on the roadside.

8.23. General

Despite the above factors, the survey shows that the cart continues to occupy an indispensable place in the rural economy. While carts have

lost much ground to trucks in the mandis or market centres, they have increased in number in the villages and are not handling any lower volume of traffic than ten years back. The reasons for this vitality of trucks are the following :

(i) The villages are mostly connected with mandis through katcha roads which are quite often narrow, uneven and unfit for use by mechanical means of transport.

(ii) The unit of farming being small, the marketable surplus per household is small and that too is sold in more than one instalment. Not all the marketable surplus needs be taken to markets. In the circumstances, carts are both suitable and economical.

(iii) The growers prefer to send the produce to the nearer submandis or even periodical mandis. This practice makes for a shortening of the hauling distance.

(iv) The cultivators use carts for various agricultural uses like carrying fertilisers and manures to the fields, carrying produce from farm to store house, sugarcane to the crushes or fodder from distant fields. Thus, their use for marketing operations involves very little additional outlay or expenditure. Besides, ownership of carts is a status symbol and, as such is desired for non-economic reasons also.

Trucks have, however, gained in importance in longer hauls, particularly in the field of despatches from mandis. Here they have secured gains at the expense of railways as well as carts. On the village side, they will continue to gain ground with improvement in the condition of roads and changes in the cropping pattern making for a shift to more valuable, commercial and perishable crops. But the effect of these changes will be slow and gradual as long as the market lots continue to be small enough to be handled by carts. A major shift in the use of trucks can come only after structural changes, involving changes in the unit of farming and marketing, take place.

SURVEY OF BULLOCK CARTS & OTHER TRADITIONAL MODES OF TRANSPORT

I. Mandi Schedule (M.S.)

1. *Identification*
   - 1.1 Name
   - 1.2 Thana
   - 1.3 Tehsil
   - 1.4 District
   - 1.5 State
   - 1.6 Population
   - 1.7 Date of filling
   - 1.8 Signature of officer who may collect the information
   - 1.9 Countersignature of R.E.O.

2. *Location*

Distance from	*Distance (miles)*
1. Tehsil	
2. Thana	
3. District Headquarters	
4. State Headquarters	
5. Block Headquarters	

3. *Area and number of villages in the hinterland**

3.2 *Area in (Sq. miles)*

1959-60	5 years back	10 years back

3.2 *Population*

1959-60	5 years back	10 years back

3.3 *No. of villages*

1959-60	5 years back	10 years back

*Hinterland comprises the villages from which the bulk of marketable surplus is marketed in the selected mandi.

4. *Trade by road routes*

4.1 *Arrivals* Commodity	Nature of the road *	Farthest place linked to mandi and distance (Miles)	Volume of goods arriving		Percentage of goods arriving by			
					Cart		Truck	
			1959-60	10 years back (mds.)	1959-60	10 years back	1959-60	10 years back
Road 1.								
1.								
2.								
3.								
4.								
5.								
6.								
Road 2								
1.								
2.								
3.								
4.								
5.								
6.								
Road 3								
1.								
2.								
3.								
4.								
5.								
6.								

*Katcha & Pucca may be indicated. The same may be done on subsequent pages also where it occurs.

Arrivals Commodity	Nature* of the road	Farthest place linked to mandi and distance (Miles)	Volume of goods arriving		Percentage of goods arriving by			
			1959-60	10 years back (mds.)	Cart		Truck	
					1959-60	10 years back	1959-60	10 years back
Road 4								
Commodity								
1.								
2.								
3.								
4.								
5.								
6.								

4.2 *Dispatches* Commodity	Nature of the road *	Farthest place linked to mandi & distance (Miles)	Volume of goods despatched		Proportion (percentage) of goods despatched by			
			1959-60	10 years back (mds.)	Cart		Truck	
					1959-60	10 years back	1959-60	10 years back
Road 1								
1.								
2.								
3.								
4.								
5.								
6.								
Road 2								
1.								
2.								
3.								
4.								
5.								
6.								

*Katcha or Pucca

Road 3: Commodity

1.
2.
3.
4.
5.
6.

Road 4

1.
2.
3.
4.
5.
6.

5. *Trade by rail routes*

5.1 *Arrivals*

Commodity	Types of gauges Metre, Broad etc.)	Farthest place & distance from which brought (Miles)	Volume of goods brought (per year)	
			1959-60	10 years back (mds.)
1.				
2.				
3.				
4.				
5.				
6.				

5.2 *Dispatches*

1.
2.
3.
4.
5.
6.

5.3 Has there been any in-road on rail-borne trade by trucks ? If so, to what extent and why ? Whether in-road or not*.

Extent Reasons.

*Strike out that which does not apply.

N.B. To bring out the extent, some idea of the changes in the proportions handled by rail and trucks should be given.

6. *Feeding markets*

6.1 Periodical rural markets (hats, paints, etc.)

No. 1 (*specify*)

Distance	Nature* of the road	Arrivals		Proportion (%age) of arrivals carried by			
		1959-60	10 years back (mds.)	Cart		Truck	
				1959-60	10 years back	1959-60	10 years back

No. 2 (*specify*)

Distance	Nature of the road	Arrivals		Proportion (%age) of arrivals carried by			
		1959-60	10 years back (mds.)	Cart		Truck	
				1959-60	10 years back	1959-60	10 years back

*Kutcha or Pucca.

No. 3 (*specify*)

	Distance	Nature of the road	Arrivals		Proportion (Percentage) of arrivals carried by			
					Cart		Truck	
			1959-60	10 years back (mds.)	1959-60	10 years back	1959-60	10 years back

6.2 *Other markets*

No. 1 (specify) .. ..

No. 2 (specify) .. ..

No. 3 (specify) .. ..

7. Markets to which produce is exported

No. 1

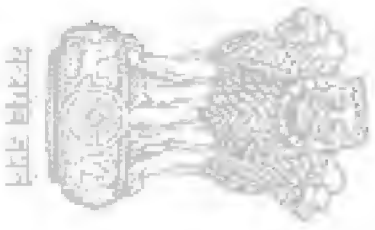
Commodity	Distance	Nature of the road	Despatches		Mode of transport			
			1959-60	10 years back (mds.)	%age by carts		%age by trucks	
					1959-60	10 years back	1959-60	10 years back
1.								
2.								
3.								
4.								
5.								
6.								

No. 2 _____

1.								
2.								
3.								
4.								
5.								
6.								

No. 3 (*Specify*)

Commodity	Distance	Nature of the road	Despatches		Mode of transport			
			1959-60	10 years back (mds.)	%age by carts		%age by trucks	
					1959-60	10 years back (mds.)	1959-60	10 years back
1.								
2.								
3.								
4.								
5.								



8. Mention recent (during last 10 years) developments, if any, in road and rail construction which have influenced its contacts with outside world.

9. Please prepare a diagram showing the markets and rail routes noted in 4 to 7.

10. Trade and other associations in the mandi and their objectives.

Name	When organised	Membership	Object	Whether owning and/or operating any means of transport Yes/No	If yes, give details.
1. Merchants' associations.					
2. Chambers of commerce.					
3. Transport associations.					
4. Others.					

11. Functionaries—their number and business handled.

Type	No.				Approximate volume of business handled in 1959-60 (mds.)
	1950-51	1957-58	1958-59	1959-60	
1. Commission agents					
2. Traders (*a*) Wholesalers (*b*) Retailers					
3. Brokers					
4. Weighment					
5. Warehouses or storage					
6. Processing					
7. Marketing cooperatives					

12.1 *Nature and volume of business*

Commodities	Arrivals (mds.) *50-51	57-58	58-59	59-60	Commodities	Dispatches (mds.) *50—51	57—58	58—59	59—60
1.					1.				
2.					2.				
3.					3.				
4.					4.				

*If figures for 1950-51 are not available, give these for the earliest subsequent year.

12.2 *Seasonal fluctuations*

Give the quarterly arrivals and dispatches for main commodities during the last 3 years and 1950-51, if available. If not, give for the peak and slack months.

@Commodity & months.	*Arrivals (Mds.)* For quarter/Peak Months 1950-51 Cart	Truck	1957-58 Cart	Truck	1958-59 Cart	Truck	1959-60 Cart	Truck	Slack Months (mds.) 1950-51 Cart	Truck	1957-58 Cart	Truck	1958-59 Cart	Truck	1959-60 Cart	Truck
(*i*) Commodity																
1. Quarter ending March/ (Peak/Slack, specify months)																
2. Quarter ending June/ (Peak/Slack, specify months)																
3. Quarter ending September/ (Peak/Slack, specify months)																
4. Quarter ending December/ (Peak/Slack, specify months)																

@Commodity and months	Quarter/Peak months				Slack months			
	1950-51	1957-58	1958-59	1959-60	1950-51	1957-58	1958-59	1959-60
	Cart Truck	Cart Truck	Cart Truck	Cart Truck	Cart Truck	Cart Truck	Cart Truck	Cart Truck

(*ii*) Commodity

1. Quarter I/Peak/Slack (Specify month)
2. „ II Do.
3. „ III Do.
4. „ IV Do.

(*iii*) Commodity

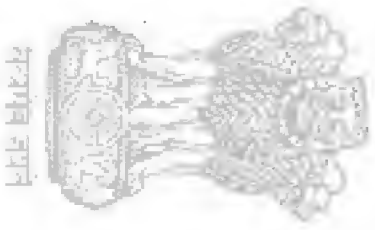
1.
2.
3.
4.

(*iv*) Commodity

1.
2
3.
4.

@If the data for different quarters are not available, estimated figs. for the peak and slack months in the different quarters may be entered under the columns of peak and slack separately specifying months concerned against each quarter.

	Dispatches							
	Quarter/Peak months				Slack months			
	1950-51	1957-58	1958-59	1959-60	1950-51	1957-58	1959-60	1959-60
	Cart Truck	Cart Truck	Cart Truck	Cart Truck	Cart Truck	Cart Truck	Cart Truck	Cart Truck
(*i*) Commodity								
1. Quarter ending March (Peak/ Slack, specify months)								
2. Quarter ending June (Peak/ Slack, specify months)								
3. Quarter ending Sept. (Peak/ Slack specify months)								
4. Quarter ending Dec. (Peak/ Slack, specify months)								
(*ii*) Commodity								
1. Quarter ending March (Peak/ Slack, specify months)								
2. Quarter ending June (Peak/ Slack, specify months)								
3. Quarter ending Sept. (Peak/ Slack, specify months)								
4. Quarter ending Dec. (Peak/ Slack, specify months)								
(*iii*) Commodity								
1. Quarter ending March (Peak/ Slack, specify months)								
2. Quarter ending June (Peak/ Slack, specify months)								
3. Quarter ending Sept (Peak/ Slack, specify months)								
4. Quarter ending Dec. (Peak/ Slack, specify months)								



12.4 Comments on recent trends in the monthly flow of business:

13. *Distribution by distance groups*

13.1 *Arrivals*

Percentage of arrivals (quarterly) by carts and trucks

	1950-51				1957-58				1958-59				1959-60			
	1st quarter	2nd quarter	3rd quarter	4th quarter	1st quarter	2nd quarter	3rd quarter	4th quarter	1st quarter	2nd quarter	3rd quarter	4th quarter	1st quarter	2nd quarter	3rd quarter	4th quarter
	C T	C T	C T	C T	C T	C T	C T	C T	C T	C T	C T	C T	C T	C T	C T	C T
1. Less than 5 miles																
2. 5 to less than 10 miles																
3. 10 to less than 20 miles																
4. 20 to less than 50 miles																
5. 50 to less than 100 miles																
6. 100 to less than 200 miles																
7. 200 miles and over.																

13.2 *Dispatches*

Percentage of dispatches (quarterly) by carts and trucks

1. Less than 5 miles
2. 5 to less than 10 miles
3. 10 to less than 20 miles
4. 20 to less than 50 miles
5. 50 to less than 100 miles
6. 100 to less than 200 miles
7. 200 miles and over.

13.3 *Comment on recent trends*

14. *Transport facilities*

14.1 ***Mandi***

What facilities for transport are available? Enumerate the various kinds and describe their relative importance.

14.2 *Bullock Carts*

	1950-51	1957-58	1958-59	1959-60
Bullock-cart owners who :				
(*a*) Ply bullock-carts on hire				
(*b*) Use them for owners' transport†				
(*c*) Use them partly for hire and partly for owners' transport.				

14.3 Out of (*a*) above, no. depending on transport business

1950-51		1957-58		1958-59		1959-60	
Wholly	Partly	Wholly	Partly	Wholly	Partly	Wholly	Partly

14.4 Bullock-carts used for own transport :

	1950-51	1957-58	1958-59	1959-60
(*i*) Ordinary tyre				
(*ii*) Pneumatic rubber tyre				
(*iii*) Other improved types of tyre				

14.5 Bullock-carts used partly for hire and partly for own transport:

	1950-51	1957-58	1958-59	1959-60
(*i*) Ordinary tyre				
(*ii*) Pneumatic rubber tyre				
(*iii*) Other improved types of tyre				

14.6 Bullock-carts used on hire by those dependent on transport business :

	1950-51		1957-58		1958-59		1959-60	
	Wholly dependent	Partly dependent	Wholly dependent	Partly dependent	Wholly dependent	Partly dependent	Wholly dependent	Partly dependent
(*i*) Ordinary tyre								
(*ii*) Pneumatic tyre								
(*iii*) Other improved types of tyre								

14.7 Hackney cart owners who :

	1950-51	1957-58	1958-59	1959-60
(*a*) Ply hackney carts on hire				
(*b*) Use them for owners' transport				
(*c*) Use them partly for hire and partly for owners' transport.				

14.8 Out of (*a*) above, no. depending on transport business.

1950-51		1957-58		1958-59		1959-60	
Wholly	Partly	Wholly	Partly	Wholly	Partly	Wholly	Partly

14.9 Hackney carts used for own transport :

	1950-51	1957-58	1958-59	1959-60
(*i*) Ordinary tyre				
(*ii*) Pneumatic rubber tyre				
(*iii*) Other improved types of tyre				

14.10 Hackney carts used partly for hire and partly for own transport :

	1950-51	1957-58	1958-59	1959-60
(*i*) Ordinary tyre				
(*ii*) Pneumatic rubber tyre				
(*iii*) Other improved types of tyre				

14.11 Hackney carts used on hire by those dependent on transport business :

	1950-51		1957-58		1958-59		1959-60	
	Wholly dependent	Partly dependent	Wholly dependent	Partly dependent	Wholly dependent	Partly dependent	Wholly dependent	Partly dependent
(*i*) Ordinary tyre								
(*ii*) Pneumatic rubber tyre								
(*iii*) Other improved types of tyre								

14.12 Truck owners :

	1950-51	1957-58	1958-59	1959-60
(*a*) Operating as public carriers				
(*b*) Operating as private carriers				
(*c*) Operating partly as public and partly as private carriers.				

		1950-51		1957-58		1958-59		1959-60	
14·13	Of (*a*) above, owners depending on transport business.	Wholly	Partly	Wholly	Partly	Wholly	Partly	Wholly	Partly

		1950-51	1957-58	1958-59	1959-60
14.14	Trucks owned by those operating				
	(*a*) As public carriers (*i*) Wholly dependent on transport business				
	(*ii*) Partly dependent on transport business.				
	(*b*) As private carriers				
	(*c*) Partly as public and partly as private carriers				

15. *Transport requirements in the Mandi :*

Purpose	Range of distance involved (Miles)	% of requirements met by (*a*) Bullock-Carts	(*b*) Hackney Carts	(*c*) Thela etc. (specify)	(*d*) Trucks Reasons
Movement of goods from :					
(*a*) Market yards/place to commission agents, merchants etc.					
(*b*) Market yard/place to :					
(*i*) Storage godowns					
(*ii*) Milling & Processing plants					
(*iii*) Rail head					
(*iv*) Others					
(*c*) Shops of commission agents and merchants to,					
(*i*) Storage godowns					
(*ii*) Milling & Processing plants					
(*iii*) Rail-head.					

16. Comments on recent development which might have influenced their relative importance.

Carts Vs. *Trucks*

16.1 Have bullock-carts been ousted by trucks during the last 10 years? If so, to what extent.

Yes/No	*Extent	Reasons@

*If yes, mention approximately the % by which traffic has shifted from carts to trucks as compared with 10 years back.

16.2 Which mode is preferred?

	Truck	Reasons	Cart	Reasons
Type of commodity				
Type of road				
Distance				
Weight				
Handling (Bulk or Sack)				

@ Reasons have to be given in both cases, *i.e.* whether the reply is 'Yes' or 'No'.

NOTE.—The intention is to get information about types for which transportation by trucks and carts is preferred. Thus, against road, if Carts are preferred on Katcha road & Trucks on pucca, write 'Pucca' under trucks & 'Katcha' under 'Carts'.

16.3 What are the future prospects of the different roads?

	Expected % rise (+) or fall (—) in proportion handled during the next 10 years.			
	Trucks	Reasons	Carts	Reasons
Incoming trade.				
Outgoing trade.				

II. BULLOCK-CART SURVEY

Interview of a selected number of hauliers (H.S.)

1. *Identification*
   - 1.1 Name
   - 1.2 Village/Town etc.
   - 1.3 Age
   - 1.4 Caste
   - 1.5 Occupation Name of occupation — Monthly Income 1959-60, 10 years back
     - (*a*) Principal
     - (*b*) Subsidiary
   - 1.6 Since when engaged in this work
   - 1.7 Date of filling
   - 1.8 Signature of Officer filling the schedule
   - 1.9 Signature of the REO.

2. *Type of vehicle possessed by him*

	Bullock cart	Hackney cart	Thela	Other traditional types	Trucks
2.1 *Owned*					
(*a*) Type (*e.g.* make in case of trucks, type of tyre & wheels in case of carts, etc.)					
(*b*) Year of purchase					
(*c*) Weight it can carry on					
(*i*) Katcha Road					
(*ii*) Pucca Road					

	Bullock	Hackney	Thela	Other traditional types	Trucks
2.2 *Hired* :					
(*a*) Type (*e.g.* make in use of trucks, type of tyre & wheels in case of carts etc.)					
(*b*) Year since hired					
(*c*) Weight it can carry on :					
(*i*) Katcha road					
(*ii*) Pucca road					

3. Type of work he was engaged in :

Type of work	Range of distance involved	Man-days of employment			
		Full time		Part-time	
		Last Month	Last Year	Last Month	Last Year
Movement of agricultural commodities from					
(*a*) Market yard place to commission agents, merchants, etc.					
(*b*) Market yard place to					
(*i*) Storage godowns					
(*ii*) Milling and processing plants					
(*iii*) Rail-head					
(*iv*) Others					
(*c*) Shops of commission agents and merchants to :					
(*i*) Storage godowns					
(*ii*) Milling and processing plants					
(*iii*) Rail-heads					
(*iv*) Others.					

4. *Factors specially favourable to the use of bullock* carts :

	Factors
1. Type of roads	
(*a*) Width	
(*b*) Condition	
2. Size of consignments	
3. Type of commodity	
4. Distance	
5. Capacity on	
(*a*) Katcha road	
(*b*) Pucca road	
6. Others (*e.g.*, care during transit and bulk handling	

Optimum distance (speed) per day on :

(*a*) Katcha road

(*b*) Pucca road

III. BULLOCK CART SURVEY

Traffic Survey Schedule (TSS) (A)—Bullock-Cart

1. ***Identification***

1.1 Name

1.2 Caste

1.3 Occupation — 1959-60 — 10 years back
Principal
Subsidiary

1.4 Name of village

1.5 Distance from mandi (Miles).

1.6 Type of carter :	Total	Katcha	Pucca
	Type 'A'	Type 'B'	Type 'C'
	Yes/No	Yes/No	Yes/No
(*i*) Using own cart :			
(*ii*) Using not owned cart :			
(*a*) Hired			
(*b*) Borrowed			

1.7 Type of cart : Old type or with Pneumatic tyres
Maximum weight it can carry (Mds.

2. Mandis where he sold his marketable surplus last year (1959-60) :—(Not relevant for Type B)

Sl. No.	Commodity	Quantity (Mds.)	Months	Mandi	Distance from this village (Katcha/Pucca)
1.					
2.					
3.					
4.					
5.					

*Types of Carter :
Type 'A'—Private carter—carrying his own produce only (Including employee, driver or representative etc. of owner of cart)
Type 'B'—Public carter—carrying others' produce.
Type 'C'—Carter—carrying his own as well as others' produce.

3. Mandis for which he got his transport work last year (1956-60) (Not relevant for type A)

Sl. No.	Commodity	Quantity (Mds.)	Months	Mandi	Distance from this village	
					Katcha	Pucca
1.						
2.						
3.						
4.						
5.						

4. Commodities carrying :

	Commodity	Quantity (Mds.)	From where picked up	Where to be sold
1.				
2.				
3.				
4.				

5. Commodities intending to carry back :

	Commodity	Quantity (Mds.)	Purpose	
			Sale or Consumption	If for sale, the place where he proposes to sell
1.				
2.				
3.				
4.				

6. (*a*) Number of times he brought his cart/truck last month.
(*b*) Number of times he brings his cart per month.
1. During peak season (Specify months).
2. During slack season (Specify months).

7. (*a*) Would he like to use truck for his produce (Not relevant for type B)
(*b*) If yes, when, for which commodities and on what freight :

	Commodity	Months	Freight per md.	Reaso
1.				
2.				
3.				
4.				

8. Hire Charges (Not relevant for Type A) :

Commodity	Rate per md.							
	Below 5 miles		Below 10 miles		Below 20 miles		Above 20 miles	
	Katcha	Pucca	Katcha	Pucca	Katcha	Pucca	Katcha	Pucca
1.								
2.								
3.								
4.								

Signature of Officer filling he Schedule

Countersignature of R.E.O.

IV. BULLOCK-CART SURVEY

Traffic Survey Schedule (TSS)(B)—Trucks

1. *Identification*

1.1 Name

1.2 Caste

1.3 Occupation — 1959-60 — 10 years back

Principal

Subsidiary

1.4 Residential address.

1.5 Distance of residential place from the mandi.

1.6 Type of driver

	Type A	Type B	Type C
	Yes/No	Yes/No	Yes/No
(*i*) Using own vehicle			
(*ii*) Using not owned vehicle			

1.7 Type of vehicle ; Make — Maximum weight it can carry (Mds.)

2. Mandis for which he got his transport work last year (1959-60) (Not relevant for Type A) :

	Commodity	Quantity (Mds.)	Months	Mandi	Distance from normal station of operation
1.					
2.					
3.					
4.					
5.					
6.					

Types of driver :

Type 'A'—Private Carrier—carrying his own produce (includes employee or representative of owner of vehicle).

Type 'B'—Public Carrier—carrying others' produce.

Type 'C'—Others—Carrying his own produce as well as others' produce.

3. Commodities carrying :

	Commodity	Quantity (Mds.)	from where picked up	Where to be sold
1.				
2.				
3.				
4.				

4. Commodities intending to carry back :

	Commodity	Quantity	Purpose	
			Sale or consumption	If for sale, the place where he proposes to sell
1.				
2.				
3.				
4.				

5. (*a*) Number of times he brought his cart/truck last month.
   (*b*) No. of times he brings his cart per month.
   1. During Peak season (specify months)
   2. During slack season (specify months).

Signature of Officer filling the Schedule

Countersignature of R.E.O.

V. BULLOCK-CART SURVEY

Village Survey Schedule (VS-I)

(*a*) Date of Filling

(*b*) Signature of officer who collected the information

(*c*) Countersignature of the R.E.O.

1. *Particulars of the village :*
   - 1.1 Name
   - 1.2 Thana
   - 1.3 Tehsil
   - 1.4 District
   - 1.5 State
   - 1.6 Distance from Mandi.
     - (*a*) Katcha
     - (*b*) Pucca
   - 1.7 Population
   - 1.8 Occupational distribution of population.

2. *Nature and volume of trade in agricultural produce*

2.1 *Quantities exported* (Mds.)

Sl. No.	Commodity	Years: 1959-60	5 years back	10 years back
1.				
2.				
3.				
4.				

2.2 *Quantities imported* (Mds.)

Sl. No.	Commodity	Years: 1959-60	5 years back	10 years back
1.				
2.				
3.				
4.				

2.3 *Peak months of exports*

Sl. No.	Commodity	Months (% of annual export) *Kharif*
1.		1.
		2.
		3.
2.		1.
		2.
		3.

Sl. No.	Commodity	Months (% of annual export) *Rabi*
1.		1.
		2.
		3.
2.		1.
		2.
		3.

3. *Method of Marketing*

% Taken directly by growers to :

(*a*) Periodical markets

(*b*) Selected markets

(*c*) Other markets

% Collected by itinerant traders

4. *Markets to which agricultural produce was sent in* 1959-60

Sl. No.	Name of Produce	Markets	Approximate quantities (Mds.)	Name of connecting road	Distance	
					Katcha	Pucca
1.						
2.						
3.						
4.						

5. *Places from which goods are brought*

Sl. No.	Commodity	Season of purchase	Places	App. Qty. (mds.)	Roads	Distance	Mode of transport
1.							
2.							
3.							
4.							

6. List the roads constructed or improved during the last 10 years and indicate what effect these had on direction of movement of commodities from and to the village, and the modes of transport used.

Name of road	Distance	Affect direction of trade

7. (*a*) Particulars of Bullock carts/other traditional modes

Use Characteristics	Number of Carts at present					
	Pneumatic tyre	Solid Rubber tyre	Ordinary iron tyre	Wide iron tyre	Total	No. of owners
1. For transport of own produce.						
2. For hire						
3. Partly for own produce & partly for hire.						

	No. 5 years back				No. 10 years back			
	Pneumatic Tyre	Solid Rubber tyre	Ordinary iron tyre	Wide iron tyre	Pneumatic tyre	Solid Rubber tyre	Ordinary iron tyre	Wide iron tyre
1. For transport of own produce.								
2. For hire								
3. Partly for own produce & partly on hire.								

7. (*b*) Please specify reasons for any significant changes in the numbers over the period.

8 Number of trucks visiting the village per month on an average

No.

(*i*) 10 years back

(*ii*) 5 years back

(*iii*) Now

Specify the reasons for the trends noticed.

VI. BULLOCK-CART SURVEY

Village Survey Schedule (*V.S II*)

Interview of selected house-holds possessing carts.

(*a*) Name of village

(*b*) Distance from the selected mandi (miles) — Katcha · Pucca · Total

(*c*) Date of filling

(*d*) Signature of officer who filled the schedule.

(*e*) Countersignature of R.E.O.

I. Identification

1.1 Name

1.2 Occupation — 1959-60 — 10 years back

(*a*) Principal

(*b*) Subsidiary

1.3 Size of holding, if cultivator.

1.4 No. of bullock carts/ hackney carts/thelas, etc. operated for.

Type of Possession	Carrying his own produce	Carrying others' produce only	Carrying own produce and also others' produce	
			(*a*) On hire	(*b*) For other consideration
(1) Owned				
(2) Hired				
(3) Borrowed				

2. *Particulars of the cart :*

2.1 Date when acquired

2.2 Expected period of service.

(*i*) With major repair

(*ii*) With no repairs

2.3 Capacity (For loaded cart)

2.4 Speed per hour. *Miles*

(*a*) Pucca Road

(*b*) Katcha Road

2.5 Particulars of the wheels/tyres :

(*a*) Wooden/Iron/Rubber

(*b*) Width of tyre in case of iron-tyred.

3. *Use :*

3.1 No. of days when the cart was used for :	*Last Month*	*Last year*
(*a*) Carrying marketable surplus to the mandis.		
(*b*) For other purposes (specify).		

3.2 Average no. of hours the cart was used per day :	*No. of hrs. per day*
(*a*) During busy seasons (mention months).	
(*i*) For marketing operations	
(*ii*) For other purposes	
(*b*) During slack season (mention months) :	
(*i*) For marketing operations	
(*ii*) For other purposes	

3.3 Average distance covered per day:

(*i*) During busy season

(*ii*) During slack season

4. *Commodities carried by carts*—1959-60 :

Sl. No.	Commodity	Quantity carried	To whom sold (Trader Trucker etc.	Place of sale: Name	Distance from nearest mandi* Katcha	Distance from nearest mandi* Pucca	Distance from village (mls.) Katcha	Distance from village (mls.) Pucca
1.								
2.								
3.								
4.								

*If the place is itself a mandi, this should be noted in this column.

5. *Costs :*

5.1 *Investment*

Purchase price of.

(*a*) Cart

(*b*) Bullocks/Horse/Mule etc.

(*c*) Others

5.2 *Recurring*

1. Feeding charges per day per pair of bullocks/ horses/mules etc.
2. Expenditure on repairs and maintenance — *Last one month* — *Last one year*
3. Rate of hire per day (if taken on hire)
4. Other expenses in the last one month/year.

6. *Income*

6.1 Hire charges (not relevant for carters using for private use only) :

Rate per maund

Below 5 miles		Below 10 miles		Below 20 miles		Above 20 miles	
Katcha	Pucca	Katcha	Pucca	Katcha	Pucca	Katcha	Pucca

6.2 Total earnings from the operation of bullock carts.

(*a*) During the last month

(*b*) During the last year

7. *Factors specially favourable to the use of bullock carts :*

	Factors
1. Type of roads :	
(*a*) Width	
(*b*) Condition	
2. Size of consignments	
3. Type of commodity	
4. Distance	
5. Capacity on.	
(*a*) Katcha road	
(*b*) Pucca road	
6. Others	

8. Would he like to use a truck? *Yes/No*

9. If yes, when, for which commodities and on what freight?

Sl. No.	Name of commodity	Months	Freight per md.	Reasons
1.				
2.				
3.				
4.				
5.				

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